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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 July 2001 (12.07.2001)

PCT

(10) International Publication Number
WO 01/49716 A2

BEST AVAILABLE COPY

WO 01/49716 A2

(54) Title: COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS OF COLON CANCER AND METHODS FOR THEIR USE

(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as colon cancer, are disclosed. Compositions may comprise one or more colon tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a colon tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as colon cancer. Diagnostic methods based on detecting a colon tumor protein, or mRNA encoding such a protein, in a sample are also provided.

COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS
OF COLON CANCER AND METHODS FOR THEIR USE

TECHNICAL FIELD

5   The present invention relates generally to therapy and diagnosis of cancer, such as colon cancer. The invention is more specifically related to polypeptides comprising at least a portion of a colon tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for prevention and

10   treatment of colon cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

        Cancer is a significant health problem throughout the world. Although advances have been made in detection and therapy of cancer, no vaccine or other universally successful method for prevention or treatment is currently available.

15   Current therapies, which are generally based on a combination of chemotherapy or surgery and radiation, continue to prove inadequate in many patients.

        Colon cancer is the second most frequently diagnosed malignancy in the United States as well as the second most common cause of cancer death. An estimated 95,600 new cases of colon cancer will be diagnosed in 1998, with an

20   estimated 47,700 deaths. The five-year survival rate for patients with colorectal cancer detected in an early localized stage is 92%; unfortunately, only 37% of colorectal cancer is diagnosed at this stage. The survival rate drops to 64% if the cancer is allowed to spread to adjacent organs or lymph nodes, and to 7% in patients with distant metastases.

25   The prognosis of colon cancer is directly related to the degree of penetration of the tumor through the bowel wall and the presence or absence of nodal involvement, consequently, early detection and treatment are especially important. Currently, diagnosis is aided by the use of screening assays for fecal occult blood, sigmoidoscopy, colonoscopy and double contrast barium enemas. Treatment

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regimens are determined by the type and stage of the cancer, and include surgery, radiation therapy and/or chemotherapy. Recurrence following surgery (the most common form of therapy) is a major problem and is often the ultimate cause of death. In spite of considerable research into therapies for the disease, colon cancer remains

5   difficult to diagnose and treat. In spite of considerable research into therapies for these and other cancers, colon cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

10   SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as colon cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a colon tumor protein, or a variant thereof . Certain portions and other variants are

15   immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises a sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in SEQ ID NO: 1-121, 123-197, 205-630, 632-684, 686, 690-691 and 694-1081; (b) variants of a sequence recited in SEQ ID

20   NO: 1-121, 123-197, 205-630 and 632-684, 686, 690-691 and 694-1081; and (c) complements of a sequence of (a) or (b).

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a colon tumor protein), expression vectors comprising

25   such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and an immunostimulant.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a colon tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) an immunostimulant.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with an immunostimulant.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a colon tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

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Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a colon tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating $CD4^+$ and/or $CD8^+$ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a colon tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expresses such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be colon cancer.

5

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount

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detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached figures. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

SEQUENCE IDENTIFIERS

SEQ ID NO: 1 is a first determined cDNA sequence for Contig 1, showing homology to Neutrophil Gelatinase Associated Lipocalin.

SEQ ID NO: 2 is the determined cDNA sequence for Contig 2, showing no significant homology to any known genes.

SEQ ID NO: 3 is the determined cDNA sequence for Contig 4, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 4 is the determined cDNA sequence for Contig 5, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 5 is the determined cDNA sequence for Contig 9, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 6 is the determined cDNA sequence for Contig 52, showing homology to Carcinoembryonic antigen.

SEQ ID NO: 7 is the determined cDNA sequence for Contig 6, showing homology to Villin.

SEQ ID NO: 8 is the determined cDNA sequence for Contig 8, showing no significant homology to any known genes.

SEQ ID NO: 9 is the determined cDNA sequence for Contig 10, showing homology to Transforming Growth Factor (BIGH3).

7

SEQ ID NO: 10 is the determined cDNA sequence for Contig 19, showing homology to Transforming Growth Factor (BIGH3).

SEQ ID NO: 11 is the determined cDNA sequence for Contig 21, showing homology to Transforming Growth Factor (BIGH3).

5 SEQ ID NO: 12 is the determined cDNA sequence for Contig 11, showing homology to CO-029.

SEQ ID NO: 13 is the determined cDNA sequence for Contig 55, showing homology to CO-029.

SEQ ID NO: 14 is the determined cDNA sequence for Contig 12, showing

10 homology to Chromosome 17, clone hRPC.1171_I_10, also referred to as C798P.

SEQ ID NO: 15 is the determined cDNA sequence for Contig 13, showing no significant homology to any known gene.

SEQ ID NO: 16 is the determined cDNA sequence for Contig 14, also referred to as 14261, showing no significant homology to any known gene.

15 SEQ ID NO: 17 is the determined cDNA sequence for Contig 15, showing homology to Ets-Related Transcription Factor (ERT).

SEQ ID NO: 18 is the determined cDNA sequence for Contig 16, showing homology to Chromosome 5, PAC clone 228g9 (LBNL H142).

SEQ ID NO: 19 is the determined cDNA sequence for Contig 24, showing

20 homology to Chromosome 5, PAC clone 228g9 (LBNL H142).

SEQ ID NO: 20 is the determined cDNA sequence for Contig 17, showing homology to Cytokeratin.

SEQ ID NO: 21 is the determined cDNA sequence for Contig 18, showing homology to L1-Cadherin.

25 SEQ ID NO: 22 is the determined cDNA sequence for Contig 20, showing no significant homology to any known gene.

SEQ ID NO: 23 is the determined cDNA sequence for Contig 22, showing homology to Bumetanide-sensitive Na-K-Cl cotransporter (NKCCl).

SEQ ID NO: 24 is the determined cDNA sequence for Contig 23, showing no

30 significant homology to any known gene.

8

SEQ ID NO: 25 is the determined cDNA sequence for Contig 25, showing homology to Macrophage Inflammatory Protein 3 alpha.

SEQ ID NO: 26 is the determined cDNA sequence for Contig 26, showing homology to Laminin.

SEQ ID NO: 27 is the determined cDNA sequence for Contig 48, showing homology to Laminin.

SEQ ID NO: 28 is the determined cDNA sequence for Contig 27, showing homology to Mytobularin (MTM1).

SEQ ID NO: 29 is the determined cDNA sequence for Contig 28, showing homology to Chromosome 16 BAC clone CIT987SK-A-363E6.

SEQ ID NO: 30 is the determined cDNA sequence for Contig 29, also referred to as C751P and 14247, showing no significant homology to any known gene, but partial homology to Rat GSK-3β-interacting protein Axil homolog.

SEQ ID NO: 31 is the determined cDNA sequence for Contig 30, showing homology to Zinc Finger Transcription Factor (ZNF207).

SEQ ID NO: 32 is the determined cDNA sequence for Contig 31, showing no significant homology to any known gene, but partial homology to Mus musculus GOB-4 homolog.

SEQ ID NO: 33 is the determined cDNA sequence for Contig 35, showing no significant homology to any known gene, but partial homology to Mus musculus GOB-4 homolog.

SEQ ID NO: 34 is the determined cDNA sequence for Contig 32, showing no significant homology to any known gene.

SEQ ID NO: 35 is the determined cDNA sequence for Contig 34, showing homology to Desmoglein 2.

SEQ ID NO: 36 is the determined cDNA sequence for Contig 36, showing no significant homology to any known gene.

SEQ ID NO: 37 is the determined cDNA sequence for Contig 37, showing homology to Putative Transmembrane Protein.

SEQ ID NO: 38 is the determined cDNA sequence for Contig 38, also referred to as C796P and 14219, showing no significant homology to any known gene.

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SEQ ID NO: 39 is the determined cDNA sequence for Contig 40, showing homology to Nonspecific Cross-reacting Antigen.

SEQ ID NO: 40 is the determined cDNA sequence for Contig 41, also referred to as C799P and 14308, showing no significant homology to any known gene.

SEQ ID NO: 41 is the determined cDNA sequence for Contig 42, also referred to as C794P and 14309, showing no significant homology to any known gene.

SEQ ID NO: 42 is the determined cDNA sequence for Contig 43, showing homology to Chromosome 1 specific transcript KIAA0487.

SEQ ID NO: 43 is the determined cDNA sequence for Contig 45, showing homology to hMCM2.

SEQ ID NO: 44 is the determined cDNA sequence for Contig 46, showing homology to ETS2.

SEQ ID NO: 45 is the determined cDNA sequence for Contig 49, showing homology to Pump-1.

SEQ ID NO: 46 is the determined cDNA sequence for Contig 50, also referred to as C792P and 18323, showing no significant homology to any known gene.

SEQ ID NO: 47 is the determined cDNA sequence for Contig 51, also referred to as C795P and 14317, showing no significant homology to any known gene.

SEQ ID NO: 48 is the determined cDNA sequence for 11092, showing no significant homology to any known gene.

SEQ ID NO: 49 is the determined cDNA sequence for 11093, showing no significant homology to any known gene.

SEQ ID NO: 50 is the determined cDNA sequence for 11094, showing homology Human Putative Enterocyte Differentiation Protein.

SEQ ID NO: 51 is the determined cDNA sequence for 11095, showing homology to Human Transcriptional Corepressor hKAP1/TIF1B mRNA.

SEQ ID NO: 52 is the determined cDNA sequence for 11096, showing no significant homology to any known gene.

SEQ ID NO: 53 is the determined cDNA sequence for 11097, showing homology to Human Nonspecific Antigen.

10

SEQ ID NO: 54 is the determined cDNA sequence for 11098, showing no significant homology to any known gene.

SEQ ID NO: 55 is the determined cDNA sequence for 11099, showing homology to Human Pancreatic Secretory Inhibitor (PST) mRNA.

SEQ ID NO: 56 is the determined cDNA sequence for 11186, showing homology to Human Pancreatic Secretory Inhibitor (PST) mRNA.

SEQ ID NO: 57 is the determined cDNA sequence for 11101, showing homology to Human Chromosome X.

SEQ ID NO: 58 is the determined cDNA sequence for 11102, showing homology to Human Chromosome X.

SEQ ID NO: 59 is the determined cDNA sequence for 11103, showing no significant homology to any known gene.

SEQ ID NO: 60 is the determined cDNA sequence for 11174, showing no significant homology to any known gene.

SEQ ID NO: 61 is the determined cDNA sequence for 11104, showing homology to Human mRNA for KIAA0154.

SEQ ID NO: 62 is the determined cDNA sequence for 11105, showing homology toHuman Apurinic/Apyrimidinic Endonuclease (hap1)mRNA.

SEQ ID NO: 63 is the determined cDNA sequence for 11106, showing homology toHuman Chromosome 12p13.

SEQ ID NO: 64 is the determined cDNA sequence for 11107, showing homology to Human 90 kDa Heat Shock Protein.

SEQ ID NO: 65 is the determined cDNA sequence for 11108, showing no significant homology to any known gene.

SEQ ID NO: 66 is the determined cDNA sequence for 11112, showing no significant homology to any known gene.

SEQ ID NO: 67 is the determined cDNA sequence for 11115, showing no significant homology to any known gene.

SEQ ID NO: 68 is the determined cDNA sequence for 11117, showing no significant homology to any known gene.

11

SEQ ID NO: 69 is the determined cDNA sequence for 11118, showing no significant homology to any known gene.

SEQ ID NO: 70 is the determined cDNA sequence for 11119, showing homology to Human Elongation Factor 1-alpha.

5   SEQ ID NO: 71 is the determined cDNA sequence for 11121, showing homology to Human Lamin B Receptor (LBR) mRNA.

SEQ ID NO: 72 is the determined cDNA sequence for 11122, showing homology to H. sapiens mRNA for Novel Glucocorticoid.

SEQ ID NO: 73 is the determined cDNA sequence for 11123, showing 10   homology to H. sapiens mRNA for snRNP protein B.

SEQ ID NO: 74 is the determined cDNA sequence for 11124, showing homology to Human Cisplatin Resistance Associated Beta-protein.

SEQ ID NO: 75 is the determined cDNA sequence for 11127, showing homology to M. musculus Calumenin mRNA.

15   SEQ ID NO: 76 is the determined cDNA sequence for 11128, showing homology to Human ras-related small GTP binding protein.

SEQ ID NO: 77 is the determined cDNA sequence for 11130, showing homology to Human Cosmid U169d2.

SEQ ID NO: 78 is the determined cDNA sequence for 11131, showing 20   homology to H. sapiens mRNA for protein homologous to Elongation 1-g.

SEQ ID NO: 79 is the determined cDNA sequence for 11134, showing no significant homology to any known gene.

SEQ ID NO: 80 is the determined cDNA sequence for 11135, showing homology to H. sapiens Nieman-Pick (NPC1) mRNA.

25   SEQ ID NO: 81 is the determined cDNA sequence for 11137, showing homology to H. sapiens mRNA for Niecin b-chain.

SEQ ID NO: 82 is the determined cDNA sequence for 11138, showing homology to Human Endogenous Retroviral Protease mRNA.

SEQ ID NO: 83 is the determined cDNA sequence for 11139, showing 30   homology to H. sapiens mRNA for DMBT1 protein.

12

SEQ ID NO: 84 is the determined cDNA sequence for 11140, showing homology to H. sapiens ras GTPase activating-like protein.

SEQ ID NO: 85 is the determined cDNA sequence for 11143, showing homology to Human Acidic Ribosomal Phosphoprotein PO mRNA.

SEQ ID NO: 86 is the determined cDNA sequence for 11144, showing homology to H. sapiens U21 mRNA.

SEQ ID NO: 87 is the determined cDNA sequence for 11145, showing homology to Human GTP-binding protein.

SEQ ID NO: 88 is the determined cDNA sequence for 11148, showing homology to H. sapiens U21 mRNA.

SEQ ID NO: 89 is the determined cDNA sequence for 11151, showing no significant homology to any known gene.

SEQ ID NO: 90 is the determined cDNA sequence for 11154, showing no significant homology to any known gene.

SEQ ID NO: 91 is the determined cDNA sequence for 11156, showing homology to H. sapiens Ribosomal Protein L27.

SEQ ID NO: 92 is the determined cDNA sequence for 11157, showing homology to H. sapiens Ribosomal Protein L27.

SEQ ID NO: 93 is the determined cDNA sequence for 11158, showing no significant homology to any known gene.

SEQ ID NO: 94 is the determined cDNA sequence for 11162, showing homology to Ag-X antigen.

SEQ ID NO: 95 is the determined cDNA sequence for 11164, showing homology to H. sapiens mRNA for Signal Recognition Protein sub14.

SEQ ID NO: 96 is the determined cDNA sequence for 11165, showing homology to Human PAC 204e5/127h14.

SEQ ID NO: 97 is the determined cDNA sequence for 11166, showing homology to Human mRNA for KIAA0108.

SEQ ID NO: 98 is the determined cDNA sequence for 11167, showing homology to H. sapiens mRNA for Neutrophil Gelatinase assct. Lipocalin.

13

SEQ ID NO: 99 is the determined cDNA sequence for 11168, showing no significant homology to any known gene.

SEQ ID NO: 100 is the determined cDNA sequence for 11172, showing no significant homology to any known gene.

SEQ ID NO: 101 is the determined cDNA sequence for 11175, showing no significant homology to any known gene.

SEQ ID NO: 102 is the determined cDNA sequence for 11176, showing homology to Human maspin mRNA.

SEQ ID NO: 103 is the determined cDNA sequence for 11177, showing homology to Human Carcinoembryonic Antigen.

SEQ ID NO: 104 is the determined cDNA sequence for 11178, showing homology to Human A-Tubulin mRNA.

SEQ ID NO: 105 is the determined cDNA sequence for 11179, showing homology to Human mRNA for proton-ATPase-like protein.

SEQ ID NO: 106 is the determined cDNA sequence for 11180, showing homology to Human HepG2 3' region cDNA clone hmd.

SEQ ID NO: 107 is the determined cDNA sequence for 11182, showing homology to Human MHC homologous to Chicken B-Complex Protein.

SEQ ID NO: 108 is the determined cDNA sequence for 11183, showing homology to Human High Mobility Group Box (SSRP1) mRNA.

SEQ ID NO: 109 is the determined cDNA sequence for 11184, showing no significant homology to any known gene.

SEQ ID NO: 110 is the determined cDNA sequence for 11185, showing no significant homology to any known gene.

SEQ ID NO: 111 is the determined cDNA sequence for 11187, showing no significant homology to any known gene.

SEQ ID NO: 112 is the determined cDNA sequence for 11190, showing homology to Human Replication Protein A 70kDa.

SEQ ID NO: 113 is the determined cDNA sequence for Contig 47, also referred to as C797P, showing homology to Human Chromosome X clone bWXD342.

14

SEQ ID NO: 114 is the determined cDNA sequence for Contig 7, showing homology to Equilibrative Nucleoside Transporter 2 (ent2).

SEQ ID NO: 115 is the determined cDNA sequence for 14235.1, also referred to as C791P, showing homology to H. sapiens chromosome 21 derived BAC containing ets-2 gene.

SEQ ID NO: 116 is the determined cDNA sequence for 14287.2, showing no significant homology to any known gene, but some degree of homology to Putative Transmembrane Protein.

SEQ ID NO: 117 is the determined cDNA sequence for 14233.1, also referred to as Contig 48, showing no significant homology to any known gene.

SEQ ID NO: 118 is the determined cDNA sequence for 14298.2, also referred to as C793P, showing no significant homology to any known gene.

SEQ ID NO: 119 is the determined cDNA sequence for 14372, also referred to as Contig 44, showing no significant homology to any known gene.

SEQ ID NO: 120 is the determined cDNA sequence for 14295, showing homology to secreted cement gland protein XAG-2 homolog.

SEQ ID NO: 121 is the determined full-length cDNA sequence for a clone showing homology to Beta IG-H3.

SEQ ID NO: 122 is the predicted amino acid sequence for the clone of SEQ ID NO: 121.

SEQ ID NO: 123 is a longer determined cDNA sequence for C751P.

SEQ ID NO: 124 is a longer determined cDNA sequence for C791P.

SEQ ID NO: 125 is a longer determined cDNA sequence for C792P.

SEQ ID NO: 126 is a longer determined cDNA sequence for C793P.

SEQ ID NO: 127 is a longer determined cDNA sequence for C794P.

SEQ ID NO: 128 is a longer determined cDNA sequence for C795P.

SEQ ID NO: 129 is a longer determined cDNA sequence for C796P.

SEQ ID NO: 130 is a longer determined cDNA sequence for C797P.

SEQ ID NO: 131 is a longer determined cDNA sequence for C798P.

SEQ ID NO: 132 is a longer determined cDNA sequence for C799P.

15

SEQ ID NO: 133 is a first partial determined cDNA sequence for CoSub-3 (also known as 23569).

SEQ ID NO: 134 is a second partial determined cDNA sequence for CoSub-3 (also known as 23569).

SEQ ID NO: 135 is a first partial determined cDNA sequence for CoSub-13 (also known as 23579).

SEQ ID NO: 136 is a second partial determined cDNA sequence for CoSub-13 (also known as 23579).

SEQ ID NO: 137 is the determined cDNA sequence for CoSub-17 (also known as 23583).

SEQ ID NO: 138 is the determined cDNA sequence for CoSub-19 (also known as 23585).

SEQ ID NO: 139 is the determined cDNA sequence for CoSub-22 (also known as 23714).

SEQ ID NO: 140 is the determined cDNA sequence for CoSub-23 (also known as 23715).

SEQ ID NO: 141 is the determined cDNA sequence for CoSub-26 (also known as 23717).

SEQ ID NO: 142 is the determined cDNA sequence for CoSub-33 (also known as 23724).

SEQ ID NO: 143 is the determined cDNA sequence for CoSub-34 (also known as 23725).

SEQ ID NO: 144 is the determined cDNA sequence for CoSub-35 (also known as 23726).

SEQ ID NO: 145 is the determined cDNA sequence for CoSub-37 (also known as 23728).

SEQ ID NO: 146 is the determined cDNA sequence for CoSub-39 (also known as 23730).

SEQ ID NO: 147 is the determined cDNA sequence for CoSub-42 (also known as 23766).

16

SEQ ID NO: 148 is the determined cDNA sequence for CoSub-44 (also known as 23768).

SEQ ID NO: 149 is the determined cDNA sequence for CoSub-47 (also known as 23771).

SEQ ID NO: 150 is the determined cDNA sequence for CoSub-54 (also known as 23778).

SEQ ID NO: 151 is the determined cDNA sequence for CoSub-55 (also known as 23779).

SEQ ID NO: 152 is the determined cDNA sequence for CT1 (also known as 24099).

SEQ ID NO: 153 is the determined cDNA sequence for CT2 (also known as 24100).

SEQ ID NO: 154 is the determined cDNA sequence for CT3 (also known as 24101).

SEQ ID NO: 155 is the determined cDNA sequence for CT6 (also known as 24104).

SEQ ID NO: 156 is the determined cDNA sequence for CT7 (also known as 24105).

SEQ ID NO: 157 is the determined cDNA sequence for CT12 (also known as 24110).

SEQ ID NO: 158 is the determined cDNA sequence for CT13 (also known as 24111).

SEQ ID NO: 159 is the determined cDNA sequence for CT14 (also known as 24112).

SEQ ID NO: 160 is the determined cDNA sequence for CT15 (also known as 24113).

SEQ ID NO: 161 is the determined cDNA sequence for CT17 (also known as 24115).

SEQ ID NO: 162 is the determined cDNA sequence for CT18 (also known as 24116).

17

SEQ ID NO: 163 is the determined cDNA sequence for CT22 (also known as 23848).

SEQ ID NO: 164 is the determined cDNA sequence for CT24 (also known as 23849).

5   SEQ ID NO: 165 is the determined cDNA sequence for CT31 (also known as 23854).

SEQ ID NO: 166 is the determined cDNA sequence for CT34 (also known as 23856).

SEQ ID NO: 167 is the determined cDNA sequence for CT37 (also known as 10   23859).

SEQ ID NO: 168 is the determined cDNA sequence for CT39 (also known as 23860).

SEQ ID NO: 169 is the determined cDNA sequence for CT40 (also known as 23861).

15   SEQ ID NO: 170 is the determined cDNA sequence for CT51 (also known as 24130).

SEQ ID NO: 171 is the determined cDNA sequence for CT53 (also known as 24132).

SEQ ID NO: 172 is the determined cDNA sequence for CT63 (also known as 20   24595).

SEQ ID NO: 173 is the determined cDNA sequence for CT88 (also known as 24608).

SEQ ID NO: 174 is the determined cDNA sequence for CT92 (also known as 24800).

25   SEQ ID NO: 175 is the determined cDNA sequence for CT94 (also known as 24802).

SEQ ID NO: 176 is the determined cDNA sequence for CT102 (also known as 24805).

SEQ ID NO: 177 is the determined cDNA sequence for CT103 (also known as 30   24806).

18

SEQ ID NO: 178 is the determined cDNA sequence for CT111 (also known as 25520).

SEQ ID NO: 179 is the determined cDNA sequence for CT118 (also known as 25522).

5   SEQ ID NO: 180 is the determined cDNA sequence for CT121 (also known as 25523).

SEQ ID NO: 181 is the determined cDNA sequence for CT126 (also known as 25527).

SEQ ID NO: 182 is the determined cDNA sequence for CT135 (also known as 10   25534).

SEQ ID NO: 183 is the determined cDNA sequence for CT140 (also known as 25537).

SEQ ID NO: 184 is the determined cDNA sequence for CT145 (also known as 25542).

15   SEQ ID NO: 185 is the determined cDNA sequence for CT147 (also known as 25543).

SEQ ID NO: 186 is the determined cDNA sequence for CT148 (also known as 25544).

SEQ ID NO: 187 is the determined cDNA sequence for CT502 (also known as 20   26420).

SEQ ID NO: 188 is the determined cDNA sequence for CT507 (also known as 26425).

SEQ ID NO: 189 is the determined cDNA sequence for CT521 (also known as 27366).

25   SEQ ID NO: 190 is the determined cDNA sequence for CT544 (also known as 27375).

SEQ ID NO: 191 is the determined cDNA sequence for CT577 (also known as 27385).

SEQ ID NO: 192 is the determined cDNA sequence for CT580 (also known as 30   27387).

19

SEQ ID NO: 193 is the determined cDNA sequence for CT594 (also known as 27540).

SEQ ID NO: 194 is the determined cDNA sequence for CT606 (also known as 27547).

SEQ ID NO: 195 is the determined cDNA sequence for CT607 (also known as 27548).

SEQ ID NO: 196 is the determined cDNA sequence for CT599 (also known as 27903).

SEQ ID NO: 197 is the determined cDNA sequence for CT632 (also known as 27922).

SEQ ID NO: 198 is the predicted amino acid sequence for CT502 (SEQ ID NO: 187).

SEQ ID NO: 199 is the predicted amino acid sequence for CT507 (SEQ ID NO: 188).

SEQ ID NO: 200 is the predicted amino acid sequence for CT521 (SEQ ID NO: 189).

SEQ ID NO: 201 is the predicted amino acid sequence for CT544 (SEQ ID NO: 190).

SEQ ID NO: 202 is the predicted amino acid sequence for CT606 (SEQ ID NO: 194).

SEQ ID NO: 203 is the predicted amino acid sequence for CT607 (SEQ ID NO: 195).

SEQ ID NO: 204 is the predicted amino acid sequence for CT632 (SEQ ID NO: 197).

SEQ ID NO: 205 is the determined cDNA sequence for clone 25244.

SEQ ID NO: 206 is the determined cDNA sequence for clone 25245.

SEQ ID NO: 207 is the determined cDNA sequence for clone 25246.

SEQ ID NO: 208 is the determined cDNA sequence for clone 25248.

SEQ ID NO: 209 is the determined cDNA sequence for clone 25249.

SEQ ID NO: 210 is the determined cDNA sequence for clone 25250.

SEQ ID NO: 211 is the determined cDNA sequence for clone 25251.

20

SEQ ID NO: 212 is the determined cDNA sequence for clone 25252.

SEQ ID NO: 213 is the determined cDNA sequence for clone 25253.

SEQ ID NO: 214 is the determined cDNA sequence for clone 25254.

SEQ ID NO: 215 is the determined cDNA sequence for clone 25255.

5 SEQ ID NO: 216 is the determined cDNA sequence for clone 25256.

SEQ ID NO: 217 is the determined cDNA sequence for clone 25257.

SEQ ID NO: 218 is the determined cDNA sequence for clone 25259.

SEQ ID NO: 219 is the determined cDNA sequence for clone 25260.

SEQ ID NO: 220 is the determined cDNA sequence for clone 25261.

10 SEQ ID NO: 221 is the determined cDNA sequence for clone 25262.

SEQ ID NO: 222 is the determined cDNA sequence for clone 25263.

SEQ ID NO: 223 is the determined cDNA sequence for clone 25264.

SEQ ID NO: 224 is the determined cDNA sequence for clone 25265.

SEQ ID NO: 225 is the determined cDNA sequence for clone 25266.

15 SEQ ID NO: 226 is the determined cDNA sequence for clone 25267.

SEQ ID NO: 227 is the determined cDNA sequence for clone 25268.

SEQ ID NO: 228 is the determined cDNA sequence for clone 25269.

SEQ ID NO: 229 is the determined cDNA sequence for clone 25271.

SEQ ID NO: 230 is the determined cDNA sequence for clone 25272.

20 SEQ ID NO: 231 is the determined cDNA sequence for clone 25273.

SEQ ID NO: 232 is the determined cDNA sequence for clone 25274.

SEQ ID NO: 233 is the determined cDNA sequence for clone 25275.

SEQ ID NO: 234 is the determined cDNA sequence for clone 25276.

SEQ ID NO: 235 is the determined cDNA sequence for clone 25277.

25 SEQ ID NO: 236 is the determined cDNA sequence for clone 25278.

SEQ ID NO: 237 is the determined cDNA sequence for clone 25280.

SEQ ID NO: 238 is the determined cDNA sequence for clone 25281.

SEQ ID NO: 239 is the determined cDNA sequence for clone 25282.

SEQ ID NO: 240 is the determined cDNA sequence for clone 25283.

30 SEQ ID NO: 241 is the determined cDNA sequence for clone 25284.

SEQ ID NO: 242 is the determined cDNA sequence for clone 25285.

21

SEQ ID NO: 243 is the determined cDNA sequence for clone 25286.

SEQ ID NO: 244 is the determined cDNA sequence for clone 25287.

SEQ ID NO: 245 is the determined cDNA sequence for clone 25288.

SEQ ID NO: 246 is the determined cDNA sequence for clone 25289.

SEQ ID NO: 247 is the determined cDNA sequence for clone 25290.

SEQ ID NO: 248 is the determined cDNA sequence for clone 25291.

SEQ ID NO: 249 is the determined cDNA sequence for clone 25292.

SEQ ID NO: 250 is the determined cDNA sequence for clone 25293.

SEQ ID NO: 251 is the determined cDNA sequence for clone 25294.

SEQ ID NO: 252 is the determined cDNA sequence for clone 25295.

SEQ ID NO: 253 is the determined cDNA sequence for clone 25296.

SEQ ID NO: 254 is the determined cDNA sequence for clone 25297.

SEQ ID NO: 255 is the determined cDNA sequence for clone 25418.

SEQ ID NO: 256 is the determined cDNA sequence for clone 25419.

SEQ ID NO: 257 is the determined cDNA sequence for clone 25420.

SEQ ID NO: 258 is the determined cDNA sequence for clone 25421.

SEQ ID NO: 259 is the determined cDNA sequence for clone 25422.

SEQ ID NO: 260 is the determined cDNA sequence for clone 25423.

SEQ ID NO: 261 is the determined cDNA sequence for clone 25424.

SEQ ID NO: 262 is the determined cDNA sequence for clone 25426.

SEQ ID NO: 263 is the determined cDNA sequence for clone 25427.

SEQ ID NO: 264 is the determined cDNA sequence for clone 25428.

SEQ ID NO: 265 is the determined cDNA sequence for clone 25429.

SEQ ID NO: 266 is the determined cDNA sequence for clone 25430.

SEQ ID NO: 267 is the determined cDNA sequence for clone 25431.

SEQ ID NO: 268 is the determined cDNA sequence for clone 25432.

SEQ ID NO: 269 is the determined cDNA sequence for clone 25433.

SEQ ID NO: 270 is the determined cDNA sequence for clone 25434.

SEQ ID NO: 271 is the determined cDNA sequence for clone 25435.

SEQ ID NO: 272 is the determined cDNA sequence for clone 25436.

SEQ ID NO: 273 is the determined cDNA sequence for clone 25437.

22

SEQ ID NO: 274 is the determined cDNA sequence for clone 25438.

SEQ ID NO: 275 is the determined cDNA sequence for clone 25439.

SEQ ID NO: 276 is the determined cDNA sequence for clone 25440.

SEQ ID NO: 277 is the determined cDNA sequence for clone 25441.

5   SEQ ID NO: 278 is the determined cDNA sequence for clone 25442.

SEQ ID NO: 279 is the determined cDNA sequence for clone 25443.

SEQ ID NO: 280 is the determined cDNA sequence for clone 25444.

SEQ ID NO: 281 is the determined cDNA sequence for clone 25445.

SEQ ID NO: 282 is the determined cDNA sequence for clone 25446.

10   SEQ ID NO: 283 is the determined cDNA sequence for clone 25447.

SEQ ID NO: 284 is the determined cDNA sequence for clone 25448.

SEQ ID NO: 285 is the determined cDNA sequence for clone 25844.

SEQ ID NO: 286 is the determined cDNA sequence for clone 25845.

SEQ ID NO: 287 is the determined cDNA sequence for clone 25846.

15   SEQ ID NO: 288 is the determined cDNA sequence for clone 25847.

SEQ ID NO: 289 is the determined cDNA sequence for clone 25848.

SEQ ID NO: 290 is the determined cDNA sequence for clone 25850.

SEQ ID NO: 291 is the determined cDNA sequence for clone 25851.

SEQ ID NO: 292 is the determined cDNA sequence for clone 25852.

20   SEQ ID NO: 293 is the determined cDNA sequence for clone 25853.

SEQ ID NO: 294 is the determined cDNA sequence for clone 25854.

SEQ ID NO: 295 is the determined cDNA sequence for clone 25855.

SEQ ID NO: 296 is the determined cDNA sequence for clone 25856.

SEQ ID NO: 297 is the determined cDNA sequence for clone 25857.

25   SEQ ID NO: 298 is the determined cDNA sequence for clone 25858.

SEQ ID NO: 299 is the determined cDNA sequence for clone 25859.

SEQ ID NO: 300 is the determined cDNA sequence for clone 25860.

SEQ ID NO: 301 is the determined cDNA sequence for clone 25861.

SEQ ID NO: 302 is the determined cDNA sequence for clone 25862.

30   SEQ ID NO: 303 is the determined cDNA sequence for clone 25863.

SEQ ID NO: 304 is the determined cDNA sequence for clone 25864.

SEQ ID NO: 305 is the determined cDNA sequence for clone 25865.

SEQ ID NO: 306 is the determined cDNA sequence for clone 25866.

SEQ ID NO: 307 is the determined cDNA sequence for clone 25867.

SEQ ID NO: 308 is the determined cDNA sequence for clone 25868.

SEQ ID NO: 309 is the determined cDNA sequence for clone 25869.

SEQ ID NO: 310 is the determined cDNA sequence for clone 25870.

SEQ ID NO: 311 is the determined cDNA sequence for clone 25871.

SEQ ID NO: 312 is the determined cDNA sequence for clone 25872.

SEQ ID NO: 313 is the determined cDNA sequence for clone 25873.

SEQ ID NO: 314 is the determined cDNA sequence for clone 25875.

SEQ ID NO: 315 is the determined cDNA sequence for clone 25876.

SEQ ID NO: 316 is the determined cDNA sequence for clone 25877.

SEQ ID NO: 317 is the determined cDNA sequence for clone 25878.

SEQ ID NO: 318 is the determined cDNA sequence for clone 25879.

SEQ ID NO: 319 is the determined cDNA sequence for clone 25880.

SEQ ID NO: 320 is the determined cDNA sequence for clone 25881.

SEQ ID NO: 321 is the determined cDNA sequence for clone 25882.

SEQ ID NO: 322 is the determined cDNA sequence for clone 25883.

SEQ ID NO: 323 is the determined cDNA sequence for clone 25884.

SEQ ID NO: 324 is the determined cDNA sequence for clone 25885.

SEQ ID NO: 325 is the determined cDNA sequence for clone 25886.

SEQ ID NO: 326 is the determined cDNA sequence for clone 25887.

SEQ ID NO: 327 is the determined cDNA sequence for clone 25888.

SEQ ID NO: 328 is the determined cDNA sequence for clone 25889.

SEQ ID NO: 329 is the determined cDNA sequence for clone 25890.

SEQ ID NO: 330 is the determined cDNA sequence for clone 25892.

SEQ ID NO: 331 is the determined cDNA sequence for clone 25894.

SEQ ID NO: 332 is the determined cDNA sequence for clone 25895.

SEQ ID NO: 333 is the determined cDNA sequence for clone 25896.

SEQ ID NO: 334 is the determined cDNA sequence for clone 25897.

SEQ ID NO: 335 is the determined cDNA sequence for clone 25899.

24

SEQ ID NO: 336 is the determined cDNA sequence for clone 25900.

SEQ ID NO: 337 is the determined cDNA sequence for clone 25901.

SEQ ID NO: 338 is the determined cDNA sequence for clone 25902.

SEQ ID NO: 339 is the determined cDNA sequence for clone 25903.

5   SEQ ID NO: 340 is the determined cDNA sequence for clone 25904.

SEQ ID NO: 341 is the determined cDNA sequence for clone 25906.

SEQ ID NO: 342 is the determined cDNA sequence for clone 25907.

SEQ ID NO: 343 is the determined cDNA sequence for clone 25908.

SEQ ID NO: 344 is the determined cDNA sequence for clone 25909.

10   SEQ ID NO: 345 is the determined cDNA sequence for clone 25910.

SEQ ID NO: 346 is the determined cDNA sequence for clone 25911.

SEQ ID NO: 347 is the determined cDNA sequence for clone 25912.

SEQ ID NO: 348 is the determined cDNA sequence for clone 25913.

SEQ ID NO: 349 is the determined cDNA sequence for clone 25914.

15   SEQ ID NO: 350 is the determined cDNA sequence for clone 25915.

SEQ ID NO: 351 is the determined cDNA sequence for clone 25916.

SEQ ID NO: 352 is the determined cDNA sequence for clone 25917.

SEQ ID NO: 353 is the determined cDNA sequence for clone 25918.

SEQ ID NO: 354 is the determined cDNA sequence for clone 25919.

20   SEQ ID NO: 355 is the determined cDNA sequence for clone 25920.

SEQ ID NO: 356 is the determined cDNA sequence for clone 25921.

SEQ ID NO: 357 is the determined cDNA sequence for clone 25922.

SEQ ID NO: 358 is the determined cDNA sequence for clone 25924.

SEQ ID NO: 359 is the determined cDNA sequence for clone 25925.

25   SEQ ID NO: 360 is the determined cDNA sequence for clone 25926.

SEQ ID NO: 361 is the determined cDNA sequence for clone 25927.

SEQ ID NO: 362 is the determined cDNA sequence for clone 25928.

SEQ ID NO: 363 is the determined cDNA sequence for clone 25929.

SEQ ID NO: 364 is the determined cDNA sequence for clone 25930.

30   SEQ ID NO: 365 is the determined cDNA sequence for clone 25931.

SEQ ID NO: 366 is the determined cDNA sequence for clone 25932.

SEQ ID NO: 367 is the determined cDNA sequence for clone 25933.

SEQ ID NO: 368 is the determined cDNA sequence for clone 25934.

SEQ ID NO: 369 is the determined cDNA sequence for clone 25935.

SEQ ID NO: 370 is the determined cDNA sequence for clone 25936.

SEQ ID NO: 371 is the determined cDNA sequence for clone 25939.

SEQ ID NO: 372 is the determined cDNA sequence for clone 32016.

SEQ ID NO: 373 is the determined cDNA sequence for clone 32021.

SEQ ID NO: 374 is the determined cDNA sequence for clone 31993.

SEQ ID NO: 375 is the determined cDNA sequence for clone 31997.

SEQ ID NO: 376 is the determined cDNA sequence for clone 31942.

SEQ ID NO: 377 is the determined cDNA sequence for clone 31937.

SEQ ID NO: 378 is the determined cDNA sequence for clone 31952.

SEQ ID NO: 379 is the determined cDNA sequence for clone 31992.

SEQ ID NO: 380 is the determined cDNA sequence for clone 31961.

SEQ ID NO: 381 is the determined cDNA sequence for clone 31964.

SEQ ID NO: 382 is the determined cDNA sequence for clone 32005.

SEQ ID NO: 383 is the determined cDNA sequence for clone 31980.

SEQ ID NO: 384 is the determined cDNA sequence for clone 31940.

SEQ ID NO: 385 is the determined cDNA sequence for clone 32004.

SEQ ID NO: 386 is the determined cDNA sequence for clone 31956.

SEQ ID NO: 387 is the determined cDNA sequence for clone 31934.

SEQ ID NO: 388 is the determined cDNA sequence for clone 31998.

SEQ ID NO: 389 is the determined cDNA sequence for clone 31973.

SEQ ID NO: 390 is the determined cDNA sequence for clone 31976.

SEQ ID NO: 391 is the determined cDNA sequence for clone 31988.

SEQ ID NO: 392 is the determined cDNA sequence for clone 31948.

SEQ ID NO: 393 is the determined cDNA sequence for clone 32013.

SEQ ID NO: 394 is the determined cDNA sequence for clone 31986.

SEQ ID NO: 395 is the determined cDNA sequence for clone 31954.

SEQ ID NO: 396 is the determined cDNA sequence for clone 31987.

SEQ ID NO: 397 is the determined cDNA sequence for clone 32029.

26

SEQ ID NO: 398 is the determined cDNA sequence for clone 32028.

SEQ ID NO: 399 is the determined cDNA sequence for clone 32012.

SEQ ID NO: 400 is the determined cDNA sequence for clone 31959.

SEQ ID NO: 401 is the determined cDNA sequence for clone 32027.

5   SEQ ID NO: 402 is the determined cDNA sequence for clone 31957.

SEQ ID NO: 403 is the determined cDNA sequence for clone 31950.

SEQ ID NO: 404 is the determined cDNA sequence for clone 32011.

SEQ ID NO: 405 is the determined cDNA sequence for clone 32022.

SEQ ID NO: 406 is the determined cDNA sequence for clone 32014.

10   SEQ ID NO: 407 is the determined cDNA sequence for clone 31963.

SEQ ID NO: 408 is the determined cDNA sequence for clone 31989.

SEQ ID NO: 409 is the determined cDNA sequence for clone 32015.

SEQ ID NO: 410 is the determined cDNA sequence for clone 32002.

SEQ ID NO: 411 is the determined cDNA sequence for clone 31939.

15   SEQ ID NO: 412 is the determined cDNA sequence for clone 32003.

SEQ ID NO: 413 is the determined cDNA sequence for clone 31936.

SEQ ID NO: 414 is the determined cDNA sequence for clone 32007.

SEQ ID NO: 415 is the determined cDNA sequence for clone 31965.

SEQ ID NO: 416 is the determined cDNA sequence for clone 31935.

20   SEQ ID NO: 417 is the determined cDNA sequence for clone 32008.

SEQ ID NO: 418 is the determined cDNA sequence for clone 31966.

SEQ ID NO: 419 is the determined cDNA sequence for clone 32020.

SEQ ID NO: 420 is the determined cDNA sequence for clone 31971.

SEQ ID NO: 421 is the determined cDNA sequence for clone 31977.

25   SEQ ID NO: 422 is the determined cDNA sequence for clone 31985.

SEQ ID NO: 423 is the determined cDNA sequence for clone 32023.

SEQ ID NO: 424 is the determined cDNA sequence for clone 31981.

SEQ ID NO: 425 is the determined cDNA sequence for clone 32006.

SEQ ID NO: 426 is the determined cDNA sequence for clone 31991.

30   SEQ ID NO: 427 is the determined cDNA sequence for clone 31995.

SEQ ID NO: 428 is the determined cDNA sequence for clone 32000.

27

SEQ ID NO: 429 is the determined cDNA sequence for clone 31990.

SEQ ID NO: 430 is the determined cDNA sequence for clone 31946.

SEQ ID NO: 431 is the determined cDNA sequence for clone 31938.

SEQ ID NO: 432 is the determined cDNA sequence for clone 31941.

5   SEQ ID NO: 433 is the determined cDNA sequence for clone 31982.

SEQ ID NO: 434 is the determined cDNA sequence for clone 31996.

SEQ ID NO: 435 is the determined cDNA sequence for clone 32010.

SEQ ID NO: 436 is the determined cDNA sequence for clone 31974.

SEQ ID NO: 437 is the determined cDNA sequence for clone 31983.

10 SEQ ID NO: 438 is the determined cDNA sequence for clone 31999.

SEQ ID NO: 439 is the determined cDNA sequence for clone 31949.

SEQ ID NO: 440 is the determined cDNA sequence for clone 31947.

SEQ ID NO: 441 is the determined cDNA sequence for clone 31994.

SEQ ID NO: 442 is the determined cDNA sequence for clone 31958.

15 SEQ ID NO: 443 is the determined cDNA sequence for clone 31975.

SEQ ID NO: 444 is the determined cDNA sequence for clone 31984.

SEQ ID NO: 445 is the determined cDNA sequence for clone 32024.

SEQ ID NO: 446 is the determined cDNA sequence for clone 31972.

SEQ ID NO: 447 is the determined cDNA sequence for clone 31943.

20 SEQ ID NO: 448 is the determined cDNA sequence for clone 32018.

SEQ ID NO: 449 is the determined cDNA sequence for clone 32026.

SEQ ID NO: 450 is the determined cDNA sequence for clone 32009.

SEQ ID NO: 451 is the determined cDNA sequence for clone 32019.

SEQ ID NO: 452 is the determined cDNA sequence for clone 32025.

25 SEQ ID NO: 453 is the determined cDNA sequence for clone 31967.

SEQ ID NO: 454 is the determined cDNA sequence for clone 31968.

SEQ ID NO: 455 is the determined cDNA sequence for clone 31955.

SEQ ID NO: 456 is the determined cDNA sequence for clone 31951.

SEQ ID NO: 457 is the determined cDNA sequence for clone 31970.

30 SEQ ID NO: 458 is the determined cDNA sequence for clone 31962.

SEQ ID NO: 459 is the determined cDNA sequence for clone 32001.

SEQ ID NO: 460 is the determined cDNA sequence for clone 31953.

SEQ ID NO: 461 is the determined cDNA sequence for clone 31944.

SEQ ID NO: 462 is the determined cDNA sequence for clone 31825.

SEQ ID NO: 463 is the determined cDNA sequence for clone 31828.

SEQ ID NO: 464 is the determined cDNA sequence for clone 31830.

SEQ ID NO: 465 is the determined cDNA sequence for clone 31841.

SEQ ID NO: 466 is the determined cDNA sequence for clone 31847.

SEQ ID NO: 467 is the determined cDNA sequence for clone 31850.

SEQ ID NO: 468 is the determined cDNA sequence for clone 31852.

SEQ ID NO: 469 is the determined cDNA sequence for clone 31855.

SEQ ID NO: 470 is the determined cDNA sequence for clone 31858.

SEQ ID NO: 471 is the determined cDNA sequence for clone 31861.

SEQ ID NO: 472 is the determined cDNA sequence for clone 31868.

SEQ ID NO: 473 is the determined cDNA sequence for clone 31870.

SEQ ID NO: 474 is the determined cDNA sequence for clone 31872.

SEQ ID NO: 475 is the determined cDNA sequence for clone 31873.

SEQ ID NO: 476 is the determined cDNA sequence for clone 31877.

SEQ ID NO: 477 is the determined cDNA sequence for clone 31878.

SEQ ID NO: 478 is the determined cDNA sequence for clone 31885.

SEQ ID NO: 479 is the determined cDNA sequence for clone 31888.

SEQ ID NO: 480 is the determined cDNA sequence for clone 31890.

SEQ ID NO: 481 is the determined cDNA sequence for clone 31893.

SEQ ID NO: 482 is the determined cDNA sequence for clone 31898.

SEQ ID NO: 483 is the determined cDNA sequence for clone 31901.

SEQ ID NO: 484 is the determined cDNA sequence for clone 31909.

SEQ ID NO: 485 is the determined cDNA sequence for clone 31910.

SEQ ID NO: 486 is the determined cDNA sequence for clone 31914.

SEQ ID NO: 487 is the determined cDNA sequence for contig 1.

SEQ ID NO: 488 is the determined cDNA sequence for contig 2.

SEQ ID NO: 489 is the determined cDNA sequence for contig 3.

SEQ ID NO: 490 is the determined cDNA sequence for contig 4.

SEQ ID NO: 491 is the determined cDNA sequence for contig 5.

SEQ ID NO: 492 is the determined cDNA sequence for contig 6.

SEQ ID NO: 493 is the determined cDNA sequence for contig 7.

SEQ ID NO: 494 is the determined cDNA sequence for contig 8.

SEQ ID NO: 495 is the determined cDNA sequence for contig 9.

SEQ ID NO: 496 is the determined cDNA sequence for contig 10.

SEQ ID NO: 497 is the determined cDNA sequence for contig 11

SEQ ID NO: 498 is the determined cDNA sequence for contig 12

SEQ ID NO: 499 is the determined cDNA sequence for contig 13.

SEQ ID NO: 500 is the determined cDNA sequence for contig 14.

SEQ ID NO: 501 is the determined cDNA sequence for contig 15.

SEQ ID NO: 502 is the determined cDNA sequence for contig 16.

SEQ ID NO: 503 is the determined cDNA sequence for contig 17.

SEQ ID NO: 504 is the determined cDNA sequence for contig 18.

SEQ ID NO: 505 is the determined cDNA sequence for contig 19.

SEQ ID NO: 506 is the determined cDNA sequence for contig 20.

SEQ ID NO: 507 is the determined cDNA sequence for contig 21.

SEQ ID NO: 508 is the determined cDNA sequence for contig 22.

SEQ ID NO: 509 is the determined cDNA sequence for contig 23.

SEQ ID NO: 510 is the determined cDNA sequence for contig 24.

SEQ ID NO: 511 is the determined cDNA sequence for contig 25.

SEQ ID NO: 512 is the determined cDNA sequence for contig 26.

SEQ ID NO: 513 is the determined cDNA sequence for contig 27.

SEQ ID NO: 514 is the determined cDNA sequence for contig 28.

SEQ ID NO: 515 is the determined cDNA sequence for contig 29.

SEQ ID NO: 516 is the determined cDNA sequence for contig 30.

SEQ ID NO: 517 is the determined cDNA sequence for contig 31.

SEQ ID NO: 518 is the determined cDNA sequence for contig 32.

SEQ ID NO: 519 is the determined cDNA sequence for contig 33.

SEQ ID NO: 520 is the determined cDNA sequence for contig 34.

SEQ ID NO: 521 is the determined cDNA sequence for contig 35.

SEQ ID NO: 522 is the determined cDNA sequence for contig 36.

SEQ ID NO: 523 is the determined cDNA sequence for contig 37.

SEQ ID NO: 524 is the determined cDNA sequence for contig 38.

SEQ ID NO: 525 is the determined cDNA sequence for contig 39.

5   SEQ ID NO: 526 is the determined cDNA sequence for contig 40.

SEQ ID NO: 527 is the determined cDNA sequence for contig 41.

SEQ ID NO: 528 is the determined cDNA sequence for contig 42.

SEQ ID NO: 529 is the determined cDNA sequence for contig 43.

SEQ ID NO: 530 is the determined cDNA sequence for contig 44.

10   SEQ ID NO: 531 is the determined cDNA sequence for contig 45.

SEQ ID NO: 532 is the determined cDNA sequence for contig 46.

SEQ ID NO: 533 is the determined cDNA sequence for contig 47.

SEQ ID NO: 534 is the determined cDNA sequence for contig 48.

SEQ ID NO: 535 is the determined cDNA sequence for contig 49.

15   SEQ ID NO: 536 is the determined cDNA sequence for contig 50.

SEQ ID NO: 537 is the determined cDNA sequence for contig 51.

SEQ ID NO: 538 is the determined cDNA sequence for contig 52.

SEQ ID NO: 539 is the determined cDNA sequence for contig 53.

SEQ ID NO: 540 is the determined cDNA sequence for contig 54.

20   SEQ ID NO: 541 is the determined cDNA sequence for contig 55.

SEQ ID NO: 542 is the determined cDNA sequence for contig 56.

SEQ ID NO: 543 is the determined cDNA sequence for contig 58.

SEQ ID NO: 544 is the determined cDNA sequence for contig 59.

SEQ ID NO: 545 is the determined cDNA sequence for contig 60.

25   SEQ ID NO: 546 is the determined cDNA sequence for contig 61.

SEQ ID NO: 547 is the determined cDNA sequence for contig 62.

SEQ ID NO: 548 is the determined cDNA sequence for contig 63.

SEQ ID NO: 549 is the determined cDNA sequence for contig 64.

SEQ ID NO: 550 is the determined cDNA sequence for contig 65.

30   SEQ ID NO: 551 is the determined cDNA sequence for contig 66.

SEQ ID NO: 552 is the determined cDNA sequence for contig 67.

SEQ ID NO: 553 is the determined cDNA sequence for contig 68.

SEQ ID NO: 554 is the determined cDNA sequence for contig 69.

SEQ ID NO: 555 is the determined cDNA sequence for contig 70.

SEQ ID NO: 556 is the determined cDNA sequence for contig 71.

SEQ ID NO: 557 is the determined cDNA sequence for contig 72.

SEQ ID NO: 558 is the determined cDNA sequence for contig 73.

SEQ ID NO: 559 is the determined cDNA sequence for contig 74.

SEQ ID NO: 560 is the determined cDNA sequence for contig 75.

SEQ ID NO: 561 is the determined cDNA sequence for contig 76.

SEQ ID NO: 562 is the determined cDNA sequence for contig 77.

SEQ ID NO: 563 is the determined cDNA sequence for contig 78.

SEQ ID NO: 564 is the determined cDNA sequence for contig 79.

SEQ ID NO: 565 is the determined cDNA sequence for contig 80.

SEQ ID NO: 566 is the determined cDNA sequence for contig 81.

SEQ ID NO: 567 is the determined cDNA sequence for contig 82.

SEQ ID NO: 568 is the determined cDNA sequence for contig 83.

SEQ ID NO: 569 is the determined cDNA sequence for clone CS1-101.

SEQ ID NO: 570 is the determined cDNA sequence for clone CS1-102.

SEQ ID NO: 571 is the determined cDNA sequence for clone CS1-104.

SEQ ID NO: 572 is the determined cDNA sequence for clone CS1-105.

SEQ ID NO: 573 is the determined 3' cDNA sequence for clone CS1-106.

SEQ ID NO: 574 is the determined 5' cDNA sequence for clone CS1-106.

SEQ ID NO: 575 is the determined cDNA sequence for clone CS1-114.

SEQ ID NO: 576 is the determined cDNA sequence for clone CS1-118.

SEQ ID NO: 577 is the determined cDNA sequence for clone CS1-120.

SEQ ID NO: 578 is the determined cDNA sequence for clone CS1-123.

SEQ ID NO: 579 is the determined 3' cDNA sequence for clone CS1-124.

SEQ ID NO: 580 is the determined 5' cDNA sequence for clone CS1-124.

SEQ ID NO: 581 is the determined cDNA sequence for clone CS1-128.

SEQ ID NO: 582 is the determined cDNA sequence for clone CS1-132.

SEQ ID NO: 583 is the determined cDNA sequence for clone CS1-136.

SEQ ID NO: 584 is the determined cDNA sequence for clone CS1-137.

SEQ ID NO: 585 is the determined cDNA sequence for clone CS1-139.

SEQ ID NO: 586 is the determined cDNA sequence for clone CS1-141.

SEQ ID NO: 587 is the determined cDNA sequence for clone CS1-152.

5   SEQ ID NO: 588 is the determined cDNA sequence for clone CS1-154.

SEQ ID NO: 589 is the determined cDNA sequence for clone CS1-156.

SEQ ID NO: 590 is the determined cDNA sequence for clone CS1-158.

SEQ ID NO: 591 is the determined cDNA sequence for clone CS1-160.

SEQ ID NO: 592 is the determined cDNA sequence for clone CS1-168.

10   SEQ ID NO: 593 is the determined cDNA sequence for clone CS1-169.

SEQ ID NO: 594 is the determined cDNA sequence for clone CS1-171.

SEQ ID NO: 595 is the determined cDNA sequence for clone CS1-176.

SEQ ID NO: 596 is the determined cDNA sequence for clone CS1-178.

SEQ ID NO: 597 is the determined cDNA sequence for clone CS1-180.

15   SEQ ID NO: 598 is the determined cDNA sequence for clone CS1-183.

SEQ ID NO: 599 is the determined cDNA sequence for clone CS1-184.

SEQ ID NO: 600 is the determined cDNA sequence for clone CS1-187.

SEQ ID NO: 601 is the determined cDNA sequence for clone CS1-190.

SEQ ID NO: 602 is the determined cDNA sequence for clone CS1-194.

20   SEQ ID NO: 603 is the determined cDNA sequence for clone CS1-195.

SEQ ID NO: 604 is the determined cDNA sequence for clone CS1-196.

SEQ ID NO: 605 is the determined cDNA sequence for clone CS1-197.

SEQ ID NO: 606 is the determined cDNA sequence for clone CS1-200.

SEQ ID NO: 607 is the determined cDNA sequence for clone CS1-206.

25   SEQ ID NO: 608 is the determined cDNA sequence for clone CS1-207.

SEQ ID NO: 609 is the determined cDNA sequence for clone CS1-234.

SEQ ID NO: 610 is the determined cDNA sequence for clone CS1-238.

SEQ ID NO: 611 is the determined cDNA sequence for clone CS1-239.

SEQ ID NO: 612 is the determined cDNA sequence for clone CS1-243.

30   SEQ ID NO: 613 is the determined cDNA sequence for clone CS1-246.

SEQ ID NO: 614 is the determined cDNA sequence for clone CS1-249.

33

SEQ ID NO: 615 is the determined cDNA sequence for clone CS1-250.

SEQ ID NO: 616 is the determined cDNA sequence for clone CS1-252.

SEQ ID NO: 617 is the determined cDNA sequence for clone CT502.

SEQ ID NO: 618 is the determined cDNA sequence for clone CT507.

SEQ ID NO: 619 is the determined cDNA sequence for clone CT521.

SEQ ID NO: 620 is the determined cDNA sequence for clone CT544.

SEQ ID NO: 621 is the determined cDNA sequence for clone CT577.

SEQ ID NO: 622 is the determined cDNA sequence for clone CT580.

SEQ ID NO: 623 is the determined cDNA sequence for clone CT594.

SEQ ID NO: 624 is the determined cDNA sequence for clone CT606.

SEQ ID NO: 625 is the determined cDNA sequence for clone CT607.

SEQ ID NO: 626 is the determined cDNA sequence for clone CT599.

SEQ ID NO: 627 is the determined cDNA sequence for clone CT632.

SEQ ID NO: 628 is the determined cDNA sequence for clone 35691.

SEQ ID NO: 629 is the determined cDNA sequence for clone 35707.

SEQ ID NO: 630 is the determined cDNA sequence for clone CSE-2.

SEQ ID NO: 631 is the amino acid sequence for clone CSE-2.

SEQ ID NO: 632 is the determined cDNA sequence for clone CT2-1.

SEQ ID NO: 633 is the determined cDNA sequence for clone CT2-6.

SEQ ID NO: 634 is the determined cDNA sequence for clone CT2-8.

SEQ ID NO: 635 is the determined cDNA sequence for clone CT2-9.

SEQ ID NO: 636 is the determined cDNA sequence for clone CT2-12.

SEQ ID NO: 637 is the determined cDNA sequence for clone CT2-15.

SEQ ID NO: 638 is the determined cDNA sequence for clone CT2-16.

SEQ ID NO: 639 is the determined cDNA sequence for clone CT2-17.

SEQ ID NO: 640 is the determined cDNA sequence for clone CT2-19.

SEQ ID NO: 641 is the determined cDNA sequence for clone CT2-23.

SEQ ID NO: 642 is the determined cDNA sequence for clone CT2-25.

SEQ ID NO: 643 is the determined cDNA sequence for clone CT2-27.

SEQ ID NO: 644 is the determined cDNA sequence for clone CT2-35.

SEQ ID NO: 645 is the determined cDNA sequence for clone CT2-39.

34

SEQ ID NO: 646 is the determined cDNA sequence for clone CT2-41.

SEQ ID NO: 647 is the determined cDNA sequence for clone CT2-43.

SEQ ID NO: 648 is the determined cDNA sequence for clone CT2-44.

SEQ ID NO: 649 is the determined cDNA sequence for clone CT2-53.

SEQ ID NO: 650 is the determined cDNA sequence for clone CT2-54.

SEQ ID NO: 651 is the determined cDNA sequence for clone CT2-55.

SEQ ID NO: 652 is the determined cDNA sequence for clone CT2-57.

SEQ ID NO: 653 is the determined cDNA sequence for clone CT2-60.

SEQ ID NO: 654 is the determined cDNA sequence for clone CT2-64.

SEQ ID NO: 655 is the determined cDNA sequence for clone CT2-67.

SEQ ID NO: 656 is the determined cDNA sequence for clone CT2-68.

SEQ ID NO: 657 is the determined cDNA sequence for clone CT2-75.

SEQ ID NO: 658 is the determined cDNA sequence for clone CT2-79.

SEQ ID NO: 659 is the determined cDNA sequence for clone CT2-109.

SEQ ID NO: 660 is the determined cDNA sequence for clone CT2-112.

SEQ ID NO: 661 is the determined cDNA sequence for clone CT2-127.

SEQ ID NO: 662 is the determined cDNA sequence for clone CT2-129.

SEQ ID NO: 663 is the determined cDNA sequence for clone CT2-156.

SEQ ID NO: 664 is the determined cDNA sequence for clone CT2-162.

SEQ ID NO: 665 is the determined cDNA sequence for clone CT2-167.

SEQ ID NO: 666 is the determined cDNA sequence for clone CT2-169.

SEQ ID NO: 667 is the determined cDNA sequence for clone CT2-172.

SEQ ID NO: 668 is the determined cDNA sequence for clone CT2-173.

SEQ ID NO: 669 is the determined cDNA sequence for clone CT2-174.

SEQ ID NO: 670 is the determined cDNA sequence for clone CT2-177.

SEQ ID NO: 671 is the determined cDNA sequence for clone CT2-181.

SEQ ID NO: 672 is the determined cDNA sequence for clone CT2-191.

SEQ ID NO: 673 is the determined cDNA sequence for clone CT2-192.

SEQ ID NO: 674 is the determined cDNA sequence for clone CT2-207.

SEQ ID NO: 675 is the determined cDNA sequence for clone CT2-222.

SEQ ID NO: 676 is the determined cDNA sequence for clone CT2-223.

35

SEQ ID NO: 677 is the determined cDNA sequence for clone CT2-233.

SEQ ID NO: 678 is the determined cDNA sequence for clone CT2-244.

SEQ ID NO: 679 is the determined cDNA sequence for clone CT2-257.

SEQ ID NO: 680 is the determined cDNA sequence for clone CT2-279.

SEQ ID NO: 681 is the determined cDNA sequence for clone CT2-288.

SEQ ID NO: 682 is the determined cDNA sequence for clone CT2-291.

SEQ ID NO:683 is the full-length cDNA sequence for human PAC (SEQ ID NOs: 18 and 19).

SEQ ID NO:684 is the full-length cDNA sequence for murine homologue of human PAC (SEQ ID NO: 683).

SEQ ID NO:685 is the predicted amino acid sequence for the clone of SEQ ID NO:683.

SEQ ID NO:686 is a longer determined cDNA sequence for clone CoSub-19 (SEQ ID NO:138).

SEQ ID NO:687 is the predicted amino acid sequence for the clone of SEQ ID NO:686.

SEQ ID NO:688 is the nucleotide sequence of the M13 forward primer.

SEQ ID NO:689 is the nucleotide sequence of the M13 reverse primer.

SEQ ID NO:690 is a longer determined cDNA sequence for C799P (SEQ ID NO:40), showing homology to homo sapiens NADH/NADPH thyroid oxidase p138-tox mRNA.

SEQ ID NO:691 is a longer determined cDNA sequence for C794P (SEQ ID NO:41).

SEQ ID NO:692 is the predicted amino acid sequence for the clone of SEQ ID NO:690.

SEQ ID NO:693 is the predicted amino acid sequence for the clone of SEQ ID NO:691.

SEQ ID NO: 694 is the determined cDNA sequence for clone R0093:A03.

SEQ ID NO: 695 is the determined cDNA sequence for clone R0093:A10.

36

SEQ ID NO: 696 is the determined cDNA sequence for clone R0093:A11.

SEQ ID NO: 697 is the determined cDNA sequence for clone R0093:A12.

SEQ ID NO: 698 is the determined cDNA sequence for clone R0093:B03.

SEQ ID NO: 699 is the determined cDNA sequence for clone R0093:B04.

SEQ ID NO: 700 is the determined cDNA sequence for clone R0093:B09.

SEQ ID NO: 701 is the determined cDNA sequence for clone R0093:B10.

SEQ ID NO: 702 is the determined cDNA sequence for clone R0093:B11.

SEQ ID NO: 703 is the determined cDNA sequence for clone R0093:B12.

SEQ ID NO: 704 is the determined cDNA sequence for clone R0093:C01.

SEQ ID NO: 705 is the determined cDNA sequence for clone R0093:C03.

SEQ ID NO: 706 is the determined cDNA sequence for clone R0093:C04.

SEQ ID NO: 707 is the determined cDNA sequence for clone R0093:C06.

SEQ ID NO: 708 is the determined cDNA sequence for clone R0093:C08.

SEQ ID NO: 709 is the determined cDNA sequence for clone R0093:C09.

SEQ ID NO: 710 is the determined cDNA sequence for clone R0093:C10.

SEQ ID NO: 711 is the determined cDNA sequence for clone

R0093:C11.

SEQ ID NO: 712 is the determined cDNA sequence for clone
R0093:C12.

SEQ ID NO: 713 is the determined cDNA sequence for clone

5   R0093:D01.

SEQ ID NO: 714 is the determined cDNA sequence for clone
R0093:D02.

SEQ ID NO: 715 is the determined cDNA sequence for clone
R0093:D03.

10   SEQ ID NO: 716 is the determined cDNA sequence for clone
R0093:D04.

SEQ ID NO: 717 is the determined cDNA sequence for clone
R0093:D05.

SEQ ID NO: 718 is the determined cDNA sequence for clone

15   R0093:D06.

SEQ ID NO: 719 is the determined cDNA sequence for clone
R0093:D07.

SEQ ID NO: 720 is the determined cDNA sequence for clone
R0093:D08.

20   SEQ ID NO: 721 is the determined cDNA sequence for clone
R0093:D10.

SEQ ID NO: 722 is the determined cDNA sequence for clone
R0093:D11.

SEQ ID NO: 723 is the determined cDNA sequence for clone

25   R0093:E02.

SEQ ID NO: 724 is the determined cDNA sequence for clone
R0093:E03.

SEQ ID NO: 725 is the determined cDNA sequence for clone
R0093:E04.

30   SEQ ID NO: 726 is the determined cDNA sequence for clone
R0093:E06.

38

SEQ ID NO: 727 is the determined cDNA sequence for clone R0093:E07.

SEQ ID NO: 728 is the determined cDNA sequence for clone R0093:E08.

SEQ ID NO: 729 is the determined cDNA sequence for clone R0093:E09.

SEQ ID NO: 730 is the determined cDNA sequence for clone R0093:E10.

SEQ ID NO: 731 is the determined cDNA sequence for clone R0093:E11.

SEQ ID NO: 732 is the determined cDNA sequence for clone R0093:F02.

SEQ ID NO: 733 is the determined cDNA sequence for clone R0093:F03.

SEQ ID NO: 734 is the determined cDNA sequence for clone R0093:F04.

SEQ ID NO: 735 is the determined cDNA sequence for clone R0093:F05.

SEQ ID NO: 736 is the determined cDNA sequence for clone R0093:F06.

SEQ ID NO: 737 is the determined cDNA sequence for clone R0093:F08.

SEQ ID NO: 738 is the determined cDNA sequence for clone R0093:F09.

SEQ ID NO: 739 is the determined cDNA sequence for clone R0093:F10.

SEQ ID NO: 740 is the determined cDNA sequence for clone R0093:F12.

SEQ ID NO: 741 is the determined cDNA sequence for clone R0093:G01.

SEQ ID NO: 742 is the determined cDNA sequence for clone

39

R0093:G03.

SEQ ID NO: 743 is the determined cDNA sequence for clone
R0093:G04.

SEQ ID NO: 744 is the determined cDNA sequence for clone
5   R0093:G06.

SEQ ID NO: 745 is the determined cDNA sequence for clone
R0093:G07.

SEQ ID NO: 746 is the determined cDNA sequence for clone
R0093:G08.

10   SEQ ID NO: 747 is the determined cDNA sequence for clone
R0093:G09.

SEQ ID NO: 748 is the determined cDNA sequence for clone
R0093:G10.

SEQ ID NO: 749 is the determined cDNA sequence for clone
15 R0093:G11.

SEQ ID NO: 750 is the determined cDNA sequence for clone
R0093:G12.

SEQ ID NO: 751 is the determined cDNA sequence for clone
R0093:H02.

20   SEQ ID NO: 752 is the determined cDNA sequence for clone
R0093:H03.

SEQ ID NO: 753 is the determined cDNA sequence for clone
R0093:H04.

SEQ ID NO: 754 is the determined cDNA sequence for clone
25 R0093:H05.

SEQ ID NO: 755 is the determined cDNA sequence for clone
R0093:H07.

SEQ ID NO: 756 is the determined cDNA sequence for clone
R0093:H08.

30   SEQ ID NO: 757 is the determined cDNA sequence for clone
R0093:H09.

40

SEQ ID NO: 758 is the determined cDNA sequence for clone R0093:H10.

SEQ ID NO: 759 is the determined cDNA sequence for clone R0093:H11.

SEQ ID NO: 760 is the determined cDNA sequence for clone R0094:A03.

SEQ ID NO: 761 is the determined cDNA sequence for clone R0094:A05.

SEQ ID NO: 762 is the determined cDNA sequence for clone R0094:A06.

SEQ ID NO: 763 is the determined cDNA sequence for clone R0094:A07.

SEQ ID NO: 764 is the determined cDNA sequence for clone R0094:A09.

SEQ ID NO: 765 is the determined cDNA sequence for clone R0094:A10.

SEQ ID NO: 766 is the determined cDNA sequence for clone R0094:A12.

SEQ ID NO: 767 is the determined cDNA sequence for clone R0094:B03.

SEQ ID NO: 768 is the determined cDNA sequence for clone R0094:B06.

SEQ ID NO: 769 is the determined cDNA sequence for clone R0094:B08.

SEQ ID NO: 770 is the determined cDNA sequence for clone R0094:B11.

SEQ ID NO: 771 is the determined cDNA sequence for clone R0094:B12.

SEQ ID NO: 772 is the determined cDNA sequence for clone R0094:C01.

SEQ ID NO: 773 is the determined cDNA sequence for clone

41

R0094:C02.

SEQ ID NO: 774 is the determined cDNA sequence for clone R0094:C03.

SEQ ID NO: 775 is the determined cDNA sequence for clone

5 R0094:C05.

SEQ ID NO: 776 is the determined cDNA sequence for clone R0094:C06.

SEQ ID NO: 777 is the determined cDNA sequence for clone R0094:C08.

10 SEQ ID NO: 778 is the determined cDNA sequence for clone R0094:C09.

SEQ ID NO: 779 is the determined cDNA sequence for clone R0094:C10.

SEQ ID NO: 780 is the determined cDNA sequence for clone

15 R0094:C11.

SEQ ID NO: 781 is the determined cDNA sequence for clone R0094:C12.

SEQ ID NO: 782 is the determined cDNA sequence for clone R0094:D01.

20 SEQ ID NO: 783 is the determined cDNA sequence for clone R0094:D02.

SEQ ID NO: 784 is the determined cDNA sequence for clone R0094:D03.

SEQ ID NO: 785 is the determined cDNA sequence for clone

25 R0094:D04.

SEQ ID NO: 786 is the determined cDNA sequence for clone R0094:D05.

SEQ ID NO: 787 is the determined cDNA sequence for clone R0094:D07.

30 SEQ ID NO: 788 is the determined cDNA sequence for clone R0094:D08.

42

SEQ ID NO: 789 is the determined cDNA sequence for clone R0094:D09.

SEQ ID NO: 790 is the determined cDNA sequence for clone R0094:D10.

SEQ ID NO: 791 is the determined cDNA sequence for clone R0094:D12.

SEQ ID NO: 792 is the determined cDNA sequence for clone R0094:E01.

SEQ ID NO: 793 is the determined cDNA sequence for clone R0094:E02.

SEQ ID NO: 794 is the determined cDNA sequence for clone R0094:E03.

SEQ ID NO: 795 is the determined cDNA sequence for clone R0094:E05.

SEQ ID NO: 796 is the determined cDNA sequence for clone R0094:E06.

SEQ ID NO: 797 is the determined cDNA sequence for clone R0094:E07.

SEQ ID NO: 798 is the determined cDNA sequence for clone R0094:E08.

SEQ ID NO: 799 is the determined cDNA sequence for clone R0094:E09.

SEQ ID NO: 800 is the determined cDNA sequence for clone R0094:E10.

SEQ ID NO: 801 is the determined cDNA sequence for clone R0094:E11.

SEQ ID NO: 802 is the determined cDNA sequence for clone R0094:E12.

SEQ ID NO: 803 is the determined cDNA sequence for clone R0094:F01.

SEQ ID NO: 804 is the determined cDNA sequence for clone

R0094:F03.

       SEQ ID NO: 805 is the determined cDNA sequence for clone R0094:F05.

       SEQ ID NO: 806 is the determined cDNA sequence for clone

5   R0094:F06.

       SEQ ID NO: 807 is the determined cDNA sequence for clone R0094:F07.

       SEQ ID NO: 808 is the determined cDNA sequence for clone R0094:F08.

10   SEQ ID NO: 809 is the determined cDNA sequence for clone R0094:F09.

       SEQ ID NO: 810 is the determined cDNA sequence for clone R0094:F10.

       SEQ ID NO: 811 is the determined cDNA sequence for clone

15 R0094:F11.

       SEQ ID NO: 812 is the determined cDNA sequence for clone R0094:F12.

       SEQ ID NO: 813 is the determined cDNA sequence for clone R0094:G02.

20   SEQ ID NO: 814 is the determined cDNA sequence for clone R0094:G03.

       SEQ ID NO: 815 is the determined cDNA sequence for clone R0094:G04.

       SEQ ID NO: 816 is the determined cDNA sequence for clone

25 R0094:G06.

       SEQ ID NO: 817 is the determined cDNA sequence for clone R0094:G07.

       SEQ ID NO: 818 is the determined cDNA sequence for clone R0094:G08.

30   SEQ ID NO: 819 is the determined cDNA sequence for clone R0094:G10.

SEQ ID NO: 820 is the determined cDNA sequence for clone R0094:G11.

SEQ ID NO: 821 is the determined cDNA sequence for clone R0094:G12.

SEQ ID NO: 822 is the determined cDNA sequence for clone R0094:H01.

SEQ ID NO: 823 is the determined cDNA sequence for clone R0094:H03.

SEQ ID NO: 824 is the determined cDNA sequence for clone R0094:H04.

SEQ ID NO: 825 is the determined cDNA sequence for clone R0094:H05.

SEQ ID NO: 826 is the determined cDNA sequence for clone R0094:H06.

SEQ ID NO: 827 is the determined cDNA sequence for clone R0094:H08.

SEQ ID NO: 828 is the determined cDNA sequence for clone R0094:H09.

SEQ ID NO: 829 is the determined cDNA sequence for clone R0094:H10.

SEQ ID NO: 830 is the determined cDNA sequence for clone R0094:H11.

SEQ ID NO: 831 is the determined cDNA sequence for clone R0095:A03.

SEQ ID NO: 832 is the determined cDNA sequence for clone R0095:A06.

SEQ ID NO: 833 is the determined cDNA sequence for clone R0095:A07.

SEQ ID NO: 834 is the determined cDNA sequence for clone R0095:B01.

SEQ ID NO: 835 is the determined cDNA sequence for clone

45

R0095:B02.

SEQ ID NO: 836 is the determined cDNA sequence for clone
R0095:B03.

SEQ ID NO: 837 is the determined cDNA sequence for clone
5   R0095:B04.

SEQ ID NO: 838 is the determined cDNA sequence for clone
R0095:B05.

SEQ ID NO: 839 is the determined cDNA sequence for clone
R0095:B06.

10   SEQ ID NO: 840 is the determined cDNA sequence for clone
R0095:B10.

SEQ ID NO: 841 is the determined cDNA sequence for clone
R0095:B11.

SEQ ID NO: 842 is the determined cDNA sequence for clone
15   R0095:B12.

SEQ ID NO: 843 is the determined cDNA sequence for clone
R0095:C01.

SEQ ID NO: 844 is the determined cDNA sequence for clone
R0095:C03.

20   SEQ ID NO: 845 is the determined cDNA sequence for clone
R0095:C04.

SEQ ID NO: 846 is the determined cDNA sequence for clone
R0095:C05.

SEQ ID NO: 847 is the determined cDNA sequence for clone
25   R0095:C06.

SEQ ID NO: 848 is the determined cDNA sequence for clone
R0095:C07.

SEQ ID NO: 849 is the determined cDNA sequence for clone
R0095:C08.

30   SEQ ID NO: 850 is the determined cDNA sequence for clone
R0095:C10.

46

SEQ ID NO: 851 is the determined cDNA sequence for clone R0095:C12.

SEQ ID NO: 852 is the determined cDNA sequence for clone R0095:D01.

SEQ ID NO: 853 is the determined cDNA sequence for clone R0095:D03.

SEQ ID NO: 854 is the determined cDNA sequence for clone R0095:D04.

SEQ ID NO: 855 is the determined cDNA sequence for clone R0095:D06.

SEQ ID NO: 856 is the determined cDNA sequence for clone R0095:D07.

SEQ ID NO: 857 is the determined cDNA sequence for clone R0095:D08.

SEQ ID NO: 858 is the determined cDNA sequence for clone R0095:D09.

SEQ ID NO: 859 is the determined cDNA sequence for clone R0095:D11.

SEQ ID NO: 860 is the determined cDNA sequence for clone R0095:D12.

SEQ ID NO: 861 is the determined cDNA sequence for clone R0095:E01.

SEQ ID NO: 862 is the determined cDNA sequence for clone R0095:E02.

SEQ ID NO: 863 is the determined cDNA sequence for clone R0095:E04.

SEQ ID NO: 864 is the determined cDNA sequence for clone R0095:E05.

SEQ ID NO: 865 is the determined cDNA sequence for clone R0095:E06.

SEQ ID NO: 866 is the determined cDNA sequence for clone

47

R0095:E07.

      SEQ ID NO: 867 is the determined cDNA sequence for clone R0095:E08.

      SEQ ID NO: 868 is the determined cDNA sequence for clone

5 R0095:E11.

      SEQ ID NO: 869 is the determined cDNA sequence for clone R0095:E12.

      SEQ ID NO: 870 is the determined cDNA sequence for clone R0095:F01.

10   SEQ ID NO: 871 is the determined cDNA sequence for clone R0095:F03.

      SEQ ID NO: 872 is the determined cDNA sequence for clone R0095:F06.

      SEQ ID NO: 873 is the determined cDNA sequence for clone

15 R0095:F10.

      SEQ ID NO: 874 is the determined cDNA sequence for clone R0095:F11.

      SEQ ID NO: 875 is the determined cDNA sequence for clone R0095:G02.

20   SEQ ID NO: 876 is the determined cDNA sequence for clone R0095:G03.

      SEQ ID NO: 877 is the determined cDNA sequence for clone R0095:G04.

      SEQ ID NO: 878 is the determined cDNA sequence for clone

25 R0095:G08.

      SEQ ID NO: 879 is the determined cDNA sequence for clone R0095:G09.

      SEQ ID NO: 880 is the determined cDNA sequence for clone R0095:G10.

30   SEQ ID NO: 881 is the determined cDNA sequence for clone R0095:H01.

SEQ ID NO: 882 is the determined cDNA sequence for clone R0095:H02.

SEQ ID NO: 883 is the determined cDNA sequence for clone R0095:H04.

SEQ ID NO: 884 is the determined cDNA sequence for clone R0095:H06.

SEQ ID NO: 885 is the determined cDNA sequence for clone R0095:H07.

SEQ ID NO: 886 is the determined cDNA sequence for clone R0095:H09.

SEQ ID NO: 887 is the determined cDNA sequence for clone R0096:A02.

SEQ ID NO: 888 is the determined cDNA sequence for clone R0096:A08.

SEQ ID NO: 889 is the determined cDNA sequence for clone R0096:A09.

SEQ ID NO: 890 is the determined cDNA sequence for clone R0096:A10.

SEQ ID NO: 891 is the determined cDNA sequence for clone R0096:A11.

SEQ ID NO: 892 is the determined cDNA sequence for clone R0096:A12.

SEQ ID NO: 893 is the determined cDNA sequence for clone R0096:B02.

SEQ ID NO: 894 is the determined cDNA sequence for clone R0096:B03.

SEQ ID NO: 895 is the determined cDNA sequence for clone R0096:B04.

SEQ ID NO: 896 is the determined cDNA sequence for clone R0096:B05.

SEQ ID NO: 897 is the determined cDNA sequence for clone

49

R0096:B06.

SEQ ID NO: 898 is the determined cDNA sequence for clone
R0096:B07.

SEQ ID NO: 899 is the determined cDNA sequence for clone
5   R0096:B08.

SEQ ID NO: 900 is the determined cDNA sequence for clone
R0096:B09.

SEQ ID NO: 901 is the determined cDNA sequence for clone
R0096:B10.

10   SEQ ID NO: 902 is the determined cDNA sequence for clone
R0096:B11.

SEQ ID NO: 903 is the determined cDNA sequence for clone
R0096:B12.

SEQ ID NO: 904 is the determined cDNA sequence for clone
15   R0096:C01.

SEQ ID NO: 905 is the determined cDNA sequence for clone
R0096:C03.

SEQ ID NO: 906 is the determined cDNA sequence for clone
R0096:C04.

20   SEQ ID NO: 907 is the determined cDNA sequence for clone
R0096:C05.

SEQ ID NO: 908 is the determined cDNA sequence for clone
R0096:C06.

SEQ ID NO: 909 is the determined cDNA sequence for clone
25   R0096:C07.

SEQ ID NO: 910 is the determined cDNA sequence for clone
R0096:C08.

SEQ ID NO: 911 is the determined cDNA sequence for clone
R0096:C09.

30   SEQ ID NO: 912 is the determined cDNA sequence for clone
R0096:C10.

SEQ ID NO: 913 is the determined cDNA sequence for clone R0096:C11.

SEQ ID NO: 914 is the determined cDNA sequence for clone R0096:C12.

SEQ ID NO: 915 is the determined cDNA sequence for clone R0096:D01.

SEQ ID NO: 916 is the determined cDNA sequence for clone R0096:D02.

SEQ ID NO: 917 is the determined cDNA sequence for clone R0096:D03.

SEQ ID NO: 918 is the determined cDNA sequence for clone R0096:D04.

SEQ ID NO: 919 is the determined cDNA sequence for clone R0096:D05.

SEQ ID NO: 920 is the determined cDNA sequence for clone R0096:D08.

SEQ ID NO: 921 is the determined cDNA sequence for clone R0096:D09.

SEQ ID NO: 922 is the determined cDNA sequence for clone R0096:D10.

SEQ ID NO: 923 is the determined cDNA sequence for clone R0096:D12.

SEQ ID NO: 924 is the determined cDNA sequence for clone R0096:E01.

SEQ ID NO: 925 is the determined cDNA sequence for clone R0096:E02.

SEQ ID NO: 926 is the determined cDNA sequence for clone R0096:E03.

SEQ ID NO: 927 is the determined cDNA sequence for clone R0096:E04.

SEQ ID NO: 928 is the determined cDNA sequence for clone

51

R0096:E05.

SEQ ID NO: 929 is the determined cDNA sequence for clone R0096:E06.

SEQ ID NO: 930 is the determined cDNA sequence for clone

5   R0096:E08.

SEQ ID NO: 931 is the determined cDNA sequence for clone R0096:E09.

SEQ ID NO: 932 is the determined cDNA sequence for clone R0096:E10.

10   SEQ ID NO: 933 is the determined cDNA sequence for clone R0096:E11.

SEQ ID NO: 934 is the determined cDNA sequence for clone R0096:E12.

SEQ ID NO: 935 is the determined cDNA sequence for clone

15   R0096:F01.

SEQ ID NO: 936 is the determined cDNA sequence for clone R0096:F02.

SEQ ID NO: 937 is the determined cDNA sequence for clone R0096:F03.

20   SEQ ID NO: 938 is the determined cDNA sequence for clone R0096:F04.

SEQ ID NO: 939 is the determined cDNA sequence for clone R0096:F05.

SEQ ID NO: 940 is the determined cDNA sequence for clone

25   R0096:F07.

SEQ ID NO: 941 is the determined cDNA sequence for clone R0096:F10.

SEQ ID NO: 942 is the determined cDNA sequence for clone R0096:F11.

30   SEQ ID NO: 943 is the determined cDNA sequence for clone R0096:G01.

52

SEQ ID NO: 944 is the determined cDNA sequence for clone R0096:G03.

SEQ ID NO: 945 is the determined cDNA sequence for clone R0096:G04.

5   SEQ ID NO: 946 is the determined cDNA sequence for clone R0096:G05.

SEQ ID NO: 947 is the determined cDNA sequence for clone R0096:G06.

SEQ ID NO: 948 is the determined cDNA sequence for clone 10 R0096:G07.

SEQ ID NO: 949 is the determined cDNA sequence for clone R0096:G09.

SEQ ID NO: 950 is the determined cDNA sequence for clone R0096:G10.

15   SEQ ID NO: 951 is the determined cDNA sequence for clone R0096:G12.

SEQ ID NO: 952 is the determined cDNA sequence for clone R0096:H01.

SEQ ID NO: 953 is the determined cDNA sequence for clone 20 R0096:H02.

SEQ ID NO: 954 is the determined cDNA sequence for clone R0096:H03.

SEQ ID NO: 955 is the determined cDNA sequence for clone R0096:H07.

25   SEQ ID NO: 956 is the determined cDNA sequence for clone R0096:H08.

SEQ ID NO: 957 is the determined cDNA sequence for clone R0097:A05.

SEQ ID NO: 958 is the determined cDNA sequence for clone 30 R0097:A06.

SEQ ID NO: 959 is the determined cDNA sequence for clone

R0097:A10.

SEQ ID NO: 960 is the determined cDNA sequence for clone R0097:A11.

SEQ ID NO: 961 is the determined cDNA sequence for clone

5   R0097:B01.

.SEQ ID NO: 962 is the determined cDNA sequence for clone R0097:B03.

SEQ ID NO: 963 is the determined cDNA sequence for clone R0097:B04.

10   SEQ ID NO: 964 is the determined cDNA sequence for clone R0097:B05.

SEQ ID NO: 965 is the determined cDNA sequence for clone R0097:B06.

SEQ ID NO: 966 is the determined cDNA sequence for clone

15   R0097:B07.

SEQ ID NO: 967 is the determined cDNA sequence for clone R0097:B11.

SEQ ID NO: 968 is the determined cDNA sequence for clone R0097:C01.

20   SEQ ID NO: 969 is the determined cDNA sequence for clone R0097:C02.

SEQ ID NO: 970 is the determined cDNA sequence for clone R0097:C03.

SEQ ID NO: 971 is the determined cDNA sequence for clone

25   R0097:C04.

SEQ ID NO: 972 is the determined cDNA sequence for clone R0097:C05.

SEQ ID NO: 973 is the determined cDNA sequence for clone R0097:C07.

30   SEQ ID NO: 974 is the determined cDNA sequence for clone R0097:C08.

54

SEQ ID NO: 975 is the determined cDNA sequence for clone R0097:C09.

SEQ ID NO: 976 is the determined cDNA sequence for clone R0097:C10.

5 SEQ ID NO: 977 is the determined cDNA sequence for clone R0097:D01.

SEQ ID NO: 978 is the determined cDNA sequence for clone R0097:D08.

SEQ ID NO: 979 is the determined cDNA sequence for clone 10 R0097:E02.

SEQ ID NO: 980 is the determined cDNA sequence for clone R0097:E09.

SEQ ID NO: 981 is the determined cDNA sequence for clone R0097:E11.

15 SEQ ID NO: 982 is the determined cDNA sequence for clone R0097:F01.

SEQ ID NO: 983 is the determined cDNA sequence for clone R0097:F11.

SEQ ID NO: 984 is the determined cDNA sequence for clone 20 R0097:G01.

SEQ ID NO: 985 is the determined cDNA sequence for clone R0097:G11.

SEQ ID NO: 986 is the determined cDNA sequence for clone R0097:G12.

25 SEQ ID NO: 987 is the determined cDNA sequence for clone R0097:H01.

SEQ ID NO: 988 is the determined cDNA sequence for clone R0097:H02.

SEQ ID NO: 989 is the determined cDNA sequence for clone 30 R0097:H04.

SEQ ID NO: 990 is the determined cDNA sequence for clone

55

R0097:H06.

SEQ ID NO: 991 is the determined cDNA sequence for clone R0097:H07.

SEQ ID NO: 992 is the determined cDNA sequence for clone R0097:H09.

5 SEQ ID NO: 993 is the determined cDNA sequence for clone R0097:H11.

SEQ ID NO: 994 is the determined cDNA sequence for clone R0098:A03.

10 SEQ ID NO: 995 is the determined cDNA sequence for clone R0098:A05.

SEQ ID NO: 996 is the determined cDNA sequence for clone R0098:A06.

SEQ ID NO: 997 is the determined cDNA sequence for clone R0098:A10.

15 SEQ ID NO: 998 is the determined cDNA sequence for clone R0098:A12.

SEQ ID NO: 999 is the determined cDNA sequence for clone R0098:B01.

20 SEQ ID NO: 1000 is the determined cDNA sequence for clone R0098:B02.

SEQ ID NO: 1001 is the determined cDNA sequence for clone R0098:B05.

SEQ ID NO: 1002 is the determined cDNA sequence for clone R0098:B06.

25 SEQ ID NO: 1003 is the determined cDNA sequence for clone R0098:B10.

SEQ ID NO: 1004 is the determined cDNA sequence for clone R0098:C03.

30 SEQ ID NO: 1005 is the determined cDNA sequence for clone R0098:C04.

56

SEQ ID NO: 1006 is the determined cDNA sequence for clone R0098:C05.

SEQ ID NO: 1007 is the determined cDNA sequence for clone R0098:C10.

SEQ ID NO: 1008 is the determined cDNA sequence for clone R0098:C11.

SEQ ID NO: 1009 is the determined cDNA sequence for clone R0098:D01.

SEQ ID NO: 1010 is the determined cDNA sequence for clone R0098:D02.

SEQ ID NO: 1011 is the determined cDNA sequence for clone R0098:D07.

SEQ ID NO: 1012 is the determined cDNA sequence for clone R0098:D08.

SEQ ID NO: 1013 is the determined cDNA sequence for clone R0098:D09.

SEQ ID NO: 1014 is the determined cDNA sequence for clone R0098:D10.

SEQ ID NO: 1015 is the determined cDNA sequence for clone R0098:D11.

SEQ ID NO: 1016 is the determined cDNA sequence for clone R0098:D12.

SEQ ID NO: 1017 is the determined cDNA sequence for clone R0098:E01.

SEQ ID NO: 1018 is the determined cDNA sequence for clone R0098:E04.

SEQ ID NO: 1019 is the determined cDNA sequence for clone R0098:E05.

SEQ ID NO: 1020 is the determined cDNA sequence for clone R0098:E06.

SEQ ID NO: 1021 is the determined cDNA sequence for clone

57

R0098:E07.

SEQ ID NO: 1022 is the determined cDNA sequence for clone

R0098:E11.

SEQ ID NO: 1023 is the determined cDNA sequence for clone

5   R0098:F04.

SEQ ID NO: 1024 is the determined cDNA sequence for clone

R0098:F05.

SEQ ID NO: 1025 is the determined cDNA sequence for clone

R0098:F06.

10   SEQ ID NO: 1026 is the determined cDNA sequence for clone

R0098:F07.

SEQ ID NO: 1027 is the determined cDNA sequence for clone

R0098:F08.

SEQ ID NO: 1028 is the determined cDNA sequence for clone

15   R0098:F09.

SEQ ID NO: 1029 is the determined cDNA sequence for clone

R0098:F10.

SEQ ID NO: 1030 is the determined cDNA sequence for clone

R0098:F11.

20   SEQ ID NO: 1031 is the determined cDNA sequence for clone

R0098:F12.

SEQ ID NO: 1032 is the determined cDNA sequence for clone

R0098:G02.

SEQ ID NO: 1033 is the determined cDNA sequence for clone

25   R0098:G03.

SEQ ID NO: 1034 is the determined cDNA sequence for clone

R0098:G05.

SEQ ID NO: 1035 is the determined cDNA sequence for clone

R0098:G06.

30   SEQ ID NO: 1036 is the determined cDNA sequence for clone

R0098:G07.

SEQ ID NO: 1037 is the determined cDNA sequence for clone R0098:G08.

SEQ ID NO: 1038 is the determined cDNA sequence for clone R0098:G09.

SEQ ID NO: 1039 is the determined cDNA sequence for clone R0098:G10.

SEQ ID NO: 1040 is the determined cDNA sequence for clone R0098:G11.

SEQ ID NO: 1041 is the determined cDNA sequence for clone R0098:G12.

SEQ ID NO: 1042 is the determined cDNA sequence for clone R0098:H02.

SEQ ID NO: 1043 is the determined cDNA sequence for clone R0098:H03.

SEQ ID NO: 1044 is the determined cDNA sequence for clone R0098:H04.

SEQ ID NO: 1045 is the determined cDNA sequence for clone R0098:H05.

SEQ ID NO: 1046 is the determined cDNA sequence for clone R0098:H07.

SEQ ID NO: 1047 is the determined cDNA sequence for clone R0098:H08.

SEQ ID NO: 1048 is the determined cDNA sequence for clone R0098:H11.

SEQ ID NO: 1049 is the determined cDNA sequence for clone C878P which shows sequence similarity to homo sapiens cDNA FLJ10884 fis, clone NT2RP4001950 and homo sapiens cDNA FLJ111I1 fis, clone PLACE1005923.

SEQ ID NO: 1050 is the determined cDNA sequence for clone C882P which shows sequence similarity to homo sapiens cDNA FLJ20116 fis, clone COLO 5655 and homo sapiens cDNA FLJ20740 fis, clone HEP07118.

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SEQ ID NO: 1051 is the determined cDNA sequence for clone C883P which shows sequence similarity to human homeobox protein Cdx2 mRNA.

SEQ ID NO: 1052 is the determined cDNA sequence for clone C884P which shows sequence similarity to human TM4SF3 (aka, CO-029).

5   SEQ ID NO: 1053 is the determined cDNA sequence for clone C886P which shows sequence similarity to human secretory protein (P1.B) mRNA and homo sapiens trefoil factor 3 (intestinal) (TFF3) mRNA.

SEQ ID NO: 1054 is the determined cDNA sequence for clone C892P which shows sequence similarity to human galectin-4 mRNA.

10   SEQ ID NO: 1055 is the determined cDNA sequence for clone C900P which shows sequence similarity to homo sapiens mucin 11 (MUC11) mRNA.

SEQ ID NO: 1056 is the determined cDNA sequence for clone C902P which shows sequence similarity to homo sapiens calcium-dependent chloride channel-1 (hCLCA1) mRNA.

15   SEQ ID NO: 1057 is the determined cDNA sequence for clone C903P which shows sequence similarity to homo sapiens transmembrane mucin 12 (MUC12) mRNA.

SEQ ID NO: 1058 is the determined cDNA sequence for clone C899P which shows sequence similarity to homo sapiens intestinal mucin (MUC2) mRNA.

20   SEQ ID NO:1059 is the predicted amino acid sequence for the clone of SEQ ID NO:1049.

SEQ ID NO:1060 is the predicted amino acid sequence for the clone of SEQ ID NO:1050.

SEQ ID NO:1061 is the predicted amino acid sequence for the clone of SEQ
25   ID NO:1051.

SEQ ID NO:1062 is the predicted amino acid sequence for the clone of SEQ ID NO:1052.

SEQ ID NO:1063 is the predicted amino acid sequence for the clone of SEQ ID NO:1053.

30   SEQ ID NO:1064 is the predicted amino acid sequence for the clone of SEQ ID NO:1054.

SEQ ID NO:1065 is the predicted amino acid sequence for the clone of SEQ ID NO:1055.

SEQ ID NO:1066 is the predicted amino acid sequence for the clone of SEQ ID NO:1056.

SEQ ID NO:1067 is the predicted amino acid sequence for the clone of SEQ ID NO:1057.

SEQ ID NO:1068 is the predicted amino acid sequence for the clone of SEQ ID NO:1058.

SEQ ID NO:1069 is the full length nucleotide sequence for clone CS1-152 (C880P, C887P).

SEQ ID NO:1070 is the predicted amino acid sequence for the clone of SEQ ID NO:1069.

SEQ ID NO:1071 is the cDNA sequence for human colon specific gene (geneseq X03195) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1072 is the cDNA sequence for human protein comprising secretory signal nucleotide sequence 3 (geneseq V29035) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1073 is the cDNA sequence for open reading frame human protein comprising secretory signal 3 (geneseq V29036) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1074 is the cDNA sequence for human colon specific protein cDNA (geneseq T51784) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1075 is the cDNA sequence for human Reg 1-gamma protein (geneseq V29156) identified from a computer search of the public geneseq database and which shows similarity to clone C880P.

SEQ ID NO:1076 is the cDNA sequence for human intestinal peptide-associated transporter HPT-1 mRNA, complete cds and homo sapiens mRNA for L1-cadherin (geneseq X18166) identified from a computer search of the public geneseq database and which shows similarity to clone C888P.

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SEQ ID NO:1077 is the amino acid sequence of geneseq record W12691 which shows sequence similarity to clone C880P.

SEQ ID NO:1078 is the amino acid sequence of geneseq record W37866 which shows sequence similarity to clone C880P.

SEQ ID NO:1079 is the amino acid sequence of geneseq record W37929 which shows sequence similarity to clone C880P.

SEQ ID NO:1080 is the amino acid sequence of geneseq record W84274 which shows sequence similarity to clone C880P.

SEQ ID NO:1081 is the amino acid sequence of geneseq record W740898 which shows sequence similarity to clone C888P.

SEQ ID NO:1082 is the determined cDNA sequence for clone 27540

SEQ ID NO:1083 is the predicted amino acid sequence of clone 27540 (SEQ ID NO:1082)

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as colon cancer. The compositions described herein may include colon tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (e.g., T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a colon tumor protein or a variant thereof. A "colon tumor protein" is a protein that is expressed in colon tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain colon tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with colon cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above.

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Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

5   The present invention is based on the discovery of human colon tumor proteins. Sequences of polynucleotides encoding specific tumor proteins are provided in SEQ ID NO: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081.

COLON TUMOR PROTEIN POLYNUCLEOTIDES

10   Any polynucleotide that encodes a colon tumor protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a colon tumor protein. More preferably, a

15   polynucleotide encodes an immunogenic portion of a colon tumor protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to

20   a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

           Polynucleotides may comprise a native sequence (i.e., an endogenous sequence that encodes a colon tumor protein or a portion thereof) or may comprise a

25   variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as

30   described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity

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to a polynucleotide sequence that encodes a native colon tumor protein or a portion thereof.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) Atlas of Protein Sequence and Structure, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenes pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS 5*:151-153; Myers, E.W. and Muller W. (1988) *CABIOS 4*:11-17; Robinson, E.D. (1971) *Comb. Theor 11*:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol. 4*:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA 80*:726-730.

Preferably, the "percentage of sequence identity" is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (i.e. gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference

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sequence (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (i.e. the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native colon tumor protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (i.e., expression that is at least two fold greater in a colon tumor than in normal tissue, as determined

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using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA 93*:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA 94*:2150-2155, 1997).

5   Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as colon tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

10   An amplified portion may be used to isolate a full length gene from a suitable library (*e.g.*, a colon tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be

15   preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing

20   denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for

25   example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full

30   length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

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Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res. 16*:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic. 1*:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids Res. 19*:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.,* NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

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Certain nucleic acid sequences of cDNA molecules encoding portions of colon tumor proteins are provided in SEQ ID NO: 1-121, 123-197, 205-630, 632-684, 686, 690-691, and 694-1081. These polynucleotides were isolated from colon tumor cDNA libraries using conventional and/or PCR-based subtraction techniques, as described below.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a colon tumor protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (*e.g.*, by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a colon tumor polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a tumor protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In* Huber and Carr, *Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (*e.g.*, promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

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A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in

5   length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather

10   than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl-methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

Nucleotide sequences as described herein may be joined to a variety of

15   other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector will contain an origin of

20   replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations

25   are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox

30   virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally

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transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of
5   ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in*
10   *vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

COLON TUMOR POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise
15   at least an immunogenic portion of a colon tumor protein or a variant thereof, as described herein. As noted above, a "colon tumor protein" is a protein that is expressed by colon tumor cells. Proteins that are colon tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with colon cancer. Polypeptides as described herein may be of any length. Additional
20   sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen
25   receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a colon tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions
30   may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

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Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera

5   and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native colon tumor protein is a

10   portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary

15   skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ^{125}I-labeled Protein A.

20   As noted above, a composition may comprise a variant of a native colon tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native colon tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-

25   specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include

30   those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants

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in which a small portion (*e.g.,* 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein.

Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity
5   (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions.   A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the
10 polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups
15 having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or
20 alternatively, contain non-conservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

25   As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.,* poly-His), or to enhance binding of the polypeptide to a solid
30 support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

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Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be

5　achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete

10　recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

15　Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino

20　acids are sequentially added to a growing amino acid chain. *See* Merrifield, *J. Am. Chem. Soc. 85*:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

25　Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized

30　by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both

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immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

5   Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate

10   expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

15   A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following

20   factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as

25   Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* *40*:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* *83*:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not

30   required when the first and second polypeptides have non-essential N-terminal amino

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acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (see, for example, Stoute et al. *New Engl. J. Med.*, *336*:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium Haemophilus influenza B (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemaglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the LytA gene; *Gene* *43*:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible

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for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see* *Biotechnology 10*:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a colon tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a colon tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a colon tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about

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10^3 L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as colon cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a colon tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (e.g., blood, sera, sputum, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. See, e.g., Harlow and Lane, Antibodies: A Laboratory Manual, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (e.g., mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin

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or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity

5   chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the

10   desired specificity (*i.e.*, reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen

15   cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and

20   their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal

25   cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

30   Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be

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prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be

5   separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y, ^{123}I, ^{125}I, ^{131}I, ^{186}Re, ^{188}Re, ^{211}At, and ^{212}Bi. Preferred drugs

10   include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diptheria toxin, cholera toxin, gelonin, Pseudomonas exotoxin, Shigella toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a

15   suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl

20   group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an

25   agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described

30   in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl

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groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing

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nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

5   A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

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T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a colon tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from
15   bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the ISOLEX™ system, available from Nexell Therapeutics Inc., Irvine, CA. Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

20   T cells may be stimulated with a colon tumor polypeptide, polynucleotide encoding a colon tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a colon tumor polypeptide or polynucleotide is
25 · present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a colon tumor polypeptide if the T cells kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard
30   techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation,

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compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res. 54*:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.,* by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a colon tumor polypeptide (100 ng/ml - 100 µ g/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.,* TNF or IFN-γ) is indicative of T cell activation (*see* Coligan et al., Current Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a colon tumor polypeptide, polynucleotide or polypeptide-expressing APC may be CD4$^+$ and/or CD8$^+$. Colon tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4$^+$ or CD8$^+$ T cells that proliferate in response to a colon tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a colon tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a colon tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a colon tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or

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binding agents disclosed herein may be incorporated into pharmaceutical compositions or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and an immunostimulant. An immunostimulant may be any substance that enhances or potentiates an immune response to an exogenous antigen. Examples of immunostimulants include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems 15*:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.*, vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA 86*:317-321, 1989; Flexner et al., *Ann. N.Y.*

Acad. Sci. 569:86-103, 1989; Flexner et al., *Vaccine 8*:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques 6*:616-627, 1988; Rosenfeld et al., *Science 252*:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA 91*:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA 90*:11498-11502, 1993; Guzman et al., *Circulation 88*:2838-2848, 1993; and Guzman et al., *Cir. Res. 73*:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science 259*:1745-1749, 1993 and reviewed by Cohen, *Science 259*:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (*e.g.,* polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (*e.g.,* neutral buffered saline or phosphate buffered saline), carbohydrates (*e.g.,* glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (*e.g.,* aluminum hydroxide) and/or preservatives. Alternatively, compositions of the present

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invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of immunostimulants may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most

5   adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bortadella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant

10   65 (Merck and Company, Inc., Rahway, NJ); AS-2 (SmithKline Beecham, Philadelphia, PA); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl

15   lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (*e.g.*, IFN-γ, TNFα, IL-2 and IL-12) tend to favor

20   the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (*e.g.*, IL-4, IL-5, IL-6 and IL-10) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is

25   predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type

30   response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt.

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MPL adjuvants are available from Corixa Corp. (Seattle, WA) (*see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in

5   WO 96/02555 and WO 99/33488. Immunostimulatory DNA sequences are also described, for example, by Sato et al., *Science 273*:352, 1996. Another preferred adjuvant is a saponin, preferably QS21 (Aquila Biopharmaceuticals Inc., Framingham, MA), which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and

10   saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in

15   WO 95/17210.

Other preferred adjuvants include Montanide ISA 720 (Seppic, France), SAF (Chiron, California, United States), ISCOMS (CSL), MF-59 (Chiron), the SBAS series of adjuvants (*e.g.,* SBAS-2 or SBAS-4, available from SmithKline Beecham, Rixensart, Belgium), Detox (Ribi ImmunoChem Research Inc., Hamilton,

20   MT), RC-529 (Corixa, Seattle, WA) and Aminoalkyl glucosaminide 4-phosphates (AGPs).

Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient. The compositions described herein may be administered

25   as part of a sustained release formulation (*i.e.,* a formulation such as a capsule, sponge or gel (composed of polysaccharides, for example) that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology (*see, e.g.* Coombes et al., *Vaccine 14*:1429-1438, 1996) and administered by, for example, oral, rectal or subcutaneous implantation, or by

30   implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained

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within a reservoir surrounded by a rate controlling membrane.

Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. Such carriers include microparticles of poly(lactide-co-

5 glycolide), as well as polyacrylate, latex, starch, cellulose and dextran. Other delayed-release carriers include supramolecular biovectors, which comprise a non-liquid hydrophilic core (e.g., a cross-linked polysaccharide or oligosaccharide) and, optionally, an external layer comprising an amphiphilic compound, such as a phospholipid (see e.g., U.S. Patent No. 5,151,254 and PCT applications WO

10 94/20078, WO/94/23701 and WO 96/06638). The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within

15 pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve

20 activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

25 Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature 392*:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med. 50*:507-

30 529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*), their

ability to take up, process and present antigens with high efficiency, and their ability

to activate naïve T cell responses. Dendritic cells may, of course, be engineered to

express specific cell-surface receptors or ligands that are not commonly found on

dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated

5   by the present invention. As an alternative to dendritic cells, secreted vesicles

antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see*

Zitvogel et al., *Nature Med. 4*:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood,

bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph

10 nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For

example, dendritic cells may be differentiated *ex vivo* by adding a combination of

cytokines such as GM-CSF, IL-4, IL-13 and/or TNFα to cultures of monocytes

harvested from peripheral blood. Alternatively, CD34 positive cells harvested from

peripheral blood, umbilical cord blood or bone marrow may be differentiated into

15 dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3,

TNFα, CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce

differentiation, maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and

"mature" cells, which allows a simple way to discriminate between two well

20 characterized phenotypes. However, this nomenclature should not be construed to

exclude all possible intermediate stages of differentiation. Immature dendritic cells

are characterized as APC with a high capacity for antigen uptake and processing,

which correlates with the high expression of Fcγ receptor and mannose receptor. The

mature phenotype is typically characterized by a lower expression of these markers,

25 but a high expression of cell surface molecules responsible for T cell activation such

as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and

costimulatory molecules (*e.g.*, CD40, CD80, CD86 and 4-1BB).

APCs may generally be transfected with a polynucleotide encoding a

colon tumor protein (or portion or other variant thereof) such that the colon tumor

30 polypeptide, or an immunogenic portion thereof, is expressed on the cell surface.

Such transfection may take place *ex vivo*, and a composition or vaccine comprising

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such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally

5   be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology 75*:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the colon tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant

10   bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

15   Vaccines and pharmaceutical compositions may be presented in unit-dose or multi-dose containers, such as sealed ampoules or vials. Such containers are preferably hermetically sealed to preserve sterility of the formulation until use. In general, formulations may be stored as suspensions, solutions or emulsions in oily or aqueous vehicles. Alternatively, a vaccine or pharmaceutical composition may be

20   stored in a freeze-dried condition requiring only the addition of a sterile liquid carrier immediately prior to use.

CANCER THERAPY

            In further aspects of the present invention, the compositions described

25   herein may be used for immunotherapy of cancer, such as colon cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of

30   a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor.

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Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as $CD8^+$ cytotoxic T lymphocytes and $CD4^+$ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic,

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macrophage, monocyte, fibroblast and/or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing

5   expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow in vivo and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological*

10   *Reviews 157*:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile

15   form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous,

20   intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that,

25   when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response

30   that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-

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vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 25 μg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

5   In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (e.g., more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in

10   preexisting immune responses to a colon tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

15   METHODS FOR DETECTING CANCER

          In general, a cancer may be detected in a patient based on the presence of one or more colon tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, sputum, urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to

20   indicate the presence or absence of a cancer such as colon cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the

25   presence or absence of a cancer. In general, a colon tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

          There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. See, e.g., Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory,

30   1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b)

detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the
5   remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein
10   G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized
15   binding agent. Suitable polypeptides for use within such assays include full length colon tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support
20   may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support
25   using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking
30   agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding

agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to

5   about 10 μg, and preferably about 100 ng to about 1 μg, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on

10   the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (see, e.g., Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

15   In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized

20   polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as

25   described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as

30   phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (i.e., incubation time) is a period of time that is sufficient to detect the

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presence of polypeptide within a sample obtained from an individual with colon cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary

5   to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second

10   antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of

15   binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes,

20   luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

25   To determine the presence or absence of a cancer, such as colon cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with

30   samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered

positive for the cancer.   In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined

5   from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by

10   this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

15   In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a

20   solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of

25   immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a

30   visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich

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assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1μg, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use colon tumor polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such colon tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a colon tumor protein in a biological sample. Within certain methods, a biological sample comprising $CD4^+$ and/or $CD8^+$ T cells isolated from a patient is incubated with a colon tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with one or more representative polypeptides (*e.g.*, 5 - 25 μg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of colon tumor polypeptide to serve as a control. For $CD4^+$ T cells, activation is preferably detected by evaluating proliferation of the T cells. For $CD8^+$ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a colon tumor protein in a biological sample. For

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example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of a colon tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the colon tumor protein. The amplified

5 cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a colon tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

10 To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a colon tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably,

15 oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10

20 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-121, 123-197, 205-630, 632-684, 686, 690-691, and 694-1081. Techniques for both PCR based assays and hybridization assays are well known in the art (*see*, for example, Mullis et al., *Cold Spring Harbor Symp. Quant. Biol.*, *51*:263, 1987; Erlich ed., *PCR Technology*,

25 Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule,

30 which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and

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from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample *as compared to the same dilutions of the non-cancerous sample is typically* considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple colon tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds,

reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a colon tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a colon tumor protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a colon tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a colon tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

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EXAMPLES

Example 1

ISOLATION AND CHARACTERIZATION OF COLON TUMOR POLYPEPTIDES

5   BY PCR-BASED SUBTRACTION AND MICROARRAY ANALYSIS

A cDNA library was constructed in the PCR2.1 vector (Invitrogen, Carlsbad, CA) by subtracting a pool of three colon tumors with a pool of normal colon, spleen, brain, liver, kidney, lung, stomach and small intestine using PCR

10   subtraction methodologies (Clontech, Palo Alto, CA). The subtraction was performed using a PCR-based protocol, which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600

15   bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver

20   cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs, and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of

25   additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with

30   adaptor-specific primers.

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The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich

5   differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are over-expressed in colon tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

10   To characterize the complexity and redundancy of the subtracted library, 96 clones were randomly picked and 65 were sequenced, as previously described. These sequences were further characterized by comparison with the most recent Genbank database (April, 1998) to determine their degree of novelty. No significant homologies were found to 21 of these clones, hereinafter referred to as

15 11092, 11093, 11096, 11098, 11103, 11174, 11108, 11112, 11115, 11117, 11118, 11134, 11151, 11154, 11158, 11168, 11172, 11175, 11184, 11185 and 11187. The determined cDNA sequences for these clones are provided in SEQ ID NO: 48, 49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101 and 109-111, respectively.

Two-thousand clones from the above mentioned cDNA subtraction

20 library were randomly picked and submitted to a round of PCR amplification. Briefly, 0.5 µl of glycerol stock solution was added to 99.5 µl of pcr MIX (80 µl H_2O, 10 µl 10X PCR Buffer, 6 µl 25 mM $MgCl_2$, 1 µl 10 mM dNTPs, 1 µl 100 mM M13 forward primer (CACGACGTTGTAAAACGACGG), 1 µl 100 mM M13 reverse primer (CACAGGAAACAGCTATGACC)), and 0.5 µl 5 u/ml Taq polymerase (primers

25 provided by (Operon Technologies, Alameda, CA). The PCR amplification was run for thirty cycles under the following conditions: 95°C for 5 min., 92°C for 30 sec., 57°C for 40 sec., 75°C for 2 min. and 75°C for 5 minutes.

mRNA expression levels for representative clones were determined using microarray technology (Synteni, Palo Alto, CA) in colon tumor tissues (n=25),

30 normal colon tissues (n=6), kidney, lung, liver, brain, heart, esophagus, small intestine, stomach, pancreas, adrenal gland, salivary gland, resting PBMC, activated

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PBMC, bone marrow, dendritic cells, spinal cord, blood vessels, skeletal muscle, skin, breast and fetal tissues. The number of tissue samples tested in each case was one (n=1), except where specifically noted above; additionally, all the above-mentioned tissues were derived from humans. The PCR amplification products were dotted onto

5   slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, and fluorescent-labeled cDNA probes were generated by reverse transcription according to the protocol provided by Synteni. The microarrays were probed with the labeled cDNA probes, the slides scanned, and fluorescence intensity was measured. This intensity correlates

10   with the hybridization intensity.

One hundred and forty nine clones showed two or more fold over-expression in the colon tumor probe group as compared to the normal tissue probe group. These cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A and/or

15   Model 377 (Foster City, CA). These sequences were compared to known sequences in the most recent GenBank database. No significant homologies to human gene sequences were found in forty nine of these clones, represented by the following sixteen cDNA consensus sequences: SEQ ID NO: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46 and 47, hereinafter referred to as Contig 2, 8, 13, 14, 20, 23, 29, 31, 35,

20   32, 36, 38, 41, 42, 50 and 51, respectively). Contig 29 (SEQ ID NO: 30) was found to be a Rat GSK-3-β-interacting protein Axil homolog. Also, Contigs 31 and 35 (SEQ ID NO: 32 and 33, respectively) were found to be a Mus musculus GOB-4 homolog. The determined cDNA sequences of SEQ ID NO: 1, 3-7, 9-14, 17-21, 23, 25-29, 31, 35, 37, 39, 42-45, 50, 51, 53, 55-58, 61-64, 70-78, 80-88, 91, 92, 94-98, 102-108 and

25   112 were found to show some homology to previously identified genes sequences.

Microarray analysis demonstrated Contig 2 (SEQ ID NO: 2) showed over-expression in 34% of colon tumors tested, as well as increased expression in normal pancreatic tissue, with no over-expression in normal colon tissues. Upon further analysis, Contigs 2, 8 and 23 were found to share homology to the known gene

30   GW112. Contigs 4, 5, 9 and 52 showed homology to carcinoembryonic antigen (SEQ ID NO: 3, 4, 5 and 6, respectively). A representative sampling of these fragments

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showed over-expression in 85% of colon tumors, with over-expression in normal bone marrow and 3/6 normal colon tissues. Contig 6 (SEQ ID NO: 7), showing homology to the known gene sequence for villin, and was over-expressed in about half of all colon tumors tested, with a limited degree of low level over-expression in normal

5 colon. Contig 12 (SEQ ID NO: 14), showing homology to Chromosome 17, clone hRPC.1171_I_10, also referred to as C798P, was over-expressed in approximately 70% of colon tumors tested, with low over-expression in 1/6 normal colon samples. Contig 14, also referred to as 14261 (SEQ ID NO: 16), showing no significant homology to any known gene, showed over-expression in 44% of colon tumors tested,

10 with low level expression in half of normal colon tissues, as well as small intestine and pancreatic tissue. Contig 18 (SEQ ID NO: 21), showing homology to the known gene for L1-cadherin, showed over-expression in approximately half of colon tumors and low level over-expression in 3/6 normal colon tissues tested. Contig 22 (SEQ ID NO: 23), showing homology to Bumetanide-sensitive Na-K-Cl cotransporter was

15 over-expressed in 70% of colon tumors and no over-expression in all normal tissues tested. Contig 25 (SEQ ID NO: 25), showing homology to macrophage inflammatory protein-3α, was over-expressed in over 40% of colon tumors and in activated PBMC. Contigs 26 and 48 (SEQ ID NOS: 25 and 26), showing homology to the sequence for laminin, was over-expressed in 48% of colon tumors and with low over-expression in

20 stomach tissue. Contig 28 (SEQ ID NO: 29), showing homology to the known gene sequence for Chromosome 16 BAC clone CIT987SK-A-363E6, was over-expressed in 33% of colon tumors tested with normal stomach and 2/6 normal colon tissues showing low level over-expression. Contigs 29, 31 and 35 (SEQ ID NOS: 30, 32 and 33, respectively), also referred to as C751P, an unknown sequence showing limited

25 and partial homology to Rat GSK-3β-interacting protein Axil homolog.and Mus musculus GOB-4 homolog, was over-expressed in 74% of colon tumors and no over-expression in all normal tissues tested. Contig 34 (SEQ ID NO: 35), showing homology to the known sequence for desmoglein 2, was over-expressed in 56% of colon tumors and showed low level over-expression in 1/6 normal colon tissues.

30 Contig 36 (SEQ ID NO: 36), an unknown sequence also referred to as C793P, showed over-expression in 30% of colon tumor tissues tested. Contig 37 and 14287.2 (SEQ

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ID NOS: 37 and 116), an unknown sequence, but with limited (89%) homology to the known sequence for putative transmembrane protein was over-expressed in 70% of colon tumors, as well as in normal lung tissue and 3/6 normal colon tissues tested. Contig 38, also referred to as C796P and 14219 (SEQ ID NO: 38), showing no

5   significant homology to any known gene, was over-expressed in 38% in colon tumors and no elevated over-expression in any normal tissues. Contig 41 (SEQ ID NO: 40), also referred to as C799P and 14308, an unknown sequence showing no significant homology to any known gene, was over-expressed in 22% of colon tumors. Contig 42, (SEQ ID NO: 41), also referred to as C794P and 14309, an unknown sequence

10   with no significant homology to any known gene, was over-expressed in 63% of colon tumors tested, as well as in 3/6 normal colon tissues. Contig 43 (SEQ ID NO: 42), showing homology to the known sequence for Chromosome 1 specific transcript KIAA0487 was over-expressed in 85% of colon tumors tested and in normal lung and 4/6 normal colon tissues. Contig 49 (SEQ ID NO: 45), showing homology to the

15   known sequence for pump-1, was over-expressed in 44% of colon tumors and no over-expression in all normal tissues tested. Contig 50 (SEQ ID NO: 46), also referred to as C792P and 18323, showing no significant homology to any known gene, was over-expressed in 33% of colon tumors with no detectable over-expression in any normal tissues tested. Contig 51 (SEQ ID NO: 47), also referred to as C795P and

20   14317 was over-expressed in 11% of colon tumors.

Additional microarray analysis yielded seven clones showing two or more fold over-expression in the colon tumor probe group as compared to the normal tissue probe group. Three of these clones demonstrated particularly good colon tumor specificity, and are represented by SEQ ID NO: 115, 116 and 120. Specifically, SEQ

25   ID NO: 115, referred to as C791P or 14235, which shows homology to the known gene sequence for H. sapiens chromosome 21 derived BAC containing ets-2 gene, was over-expressed in 89% of colon tumors tested and in 5/6 normal colon tissues, as well as over-expressed at low levels in normal lung and activated PBMC. Microarray analysis for SEQ ID NO: 116 is discussed above. SEQ ID NO: 120, referred to as

30   14295, showing homology to the known gene sequence for secreted cement gland protein XAG-2 homolog, was over-expressed in 70% of colon tumors and in 5/6

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normal colon tissues, as well as low level over-expression in normal small intestine, stomach and lung. All clones showing over-expression in colon tumor were sequenced and these sequences compared to the most recent Genbank database (February 12, 1999). Of the seven clones, three contained sequences that did not

5   share significant homology to any known gene sequences, represented by SEQ ID NO: 116, 117 and 119. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in colon. The determined cDNA sequences of the remaining clones (SEQ ID NO: 113-115 and 120) were found to show some homology to previously identified genes.

10   Further analysis identified a clone which was recovered several times by PCR subtraction and by expression screening using a mouse anti-scid antiserum. The determined full length cDNA sequence for this clone is provided in SEQ ID NO: 121, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 122. This clone is homologous with the known gene Beta IG-H3, as disclosed in

15   U.S. Patent No. 5,444,164. Microarray analysis demonstrated this clone to be over-expressed in 75 to 80% of colon tumors tested (n=27), with no over-expression in normal colon samples (n=6), but with some low level over-expression in other normal tissues tested.

                  Further analysis of the PCR-subtraction library described above led to

20   the isolation of longer cDNA sequences for the clones of SEQ ID NO: 30, 115, 46, 118, 41, 47, 38, 113, 14 and 40 (known as C751P, C791P, C792P, C793P, C794P, C795P, C796P, C797P, C798P and C799P, respectively). These determined cDNA sequences are provided in SEQ ID NO: 123-132, respectively. Additional sequences for the clones C794P and C799P are shown in SEQ ID NO:683 and 684, respectively,

25   and the predicted amino acid sequences are shown in SEQ ID NO:685 and 686, respectively. Still further sequences for the clones C794P and C799P are shown in SEQ ID NO: 691 and 690, respectively, and to the predicted amino acid sequence as shown in SEQ ID NO: 693 and 692, respectively.

                  Using PCR subtraction methodology described above with minor

30   modifications, transcripts from a pool of three moderately differentiated colon adenocarcinoma samples were subtracted with a set of transcripts from normal brain,

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pancreas, bone marrow, liver, heart, lung, stomach and small intestine. Modifications of the above protocol were included at the cDNA digestion steps and in the tester to drive hybridization ratios. In a first subtraction, the restriction enzymes PvuII, DraI, MscI and StuI were used to digest cDNAs, and the tester to driver ratio was 1:40, as

5   suggested by Clontech. In a second subtraction, DraI, MscI and StuI were used for cDNA digestion and a tester to driver ratio of 1:76 was used. Following the PCR amplification steps, the cDNAs were clones into pCR2.1 plasmid vector. The determined cDNA sequences of 167 isolated clones are provided in SEQ ID NO: 205-371. These sequences were compared to sequences in the public databases as

10   described above. The sequences of SEQ ID NO: 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369 and 371 were found to show some homology to previously identified ESTs. The

15   remaining sequences were found to show some homology to previously identified genes.

Using the PCR subtraction technology described above, a cDNA library from a pool of primary colon tumors was subtracted with a cDNA library prepared from normal tissues, including brain, bone marrow, kidney, heart, lung, liver,

20   pancreas, small intestine, stomach and trachea. The determined cDNA sequences for 90 clones isolated in this subtraction are provided in SEQ ID NO: 372-461. Comparison of these sequences with those in the public databases as described above, revealed no homologies to the sequences of SEQ ID NO: 426, 445 and 453. The sequences of SEQ ID NO: 372-378, 380-404, 406, 409-417, 419-423, 425, 427-429,

25   433-436, 438-441, 443, 446-451, 454, 455 and 457-461 showed some homology to previously identified genes, while the sequences of SEQ ID NO: 379, 405, 407, 408, 418, 424, 430-432, 437, 442, 444, 452 and 456 showed some homology to previously isolated ESTs.

Using the PCR subtraction methodology described above, a cDNA

30   library prepared from a pool of metastatic colon tumors was subtracted with cDNA from a pool of normal tissues, namely brain, heart, lung, lymph nodes, PBMC,

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pancreas, small intestine and stomach. The determined cDNA sequences for 82 clones isolated from the subtracted library are provided in SEQ ID NO: 487-568 (referred to as contigs 1-56 and 58-83, respectively). The sequences of SEQ ID NO: 487, 489, 490, 493-496, 499, 501-509, 511-518, 520-526, 529-542, 544, 546, 548-552, 554, 555, 557, 558, 560, 562, 563, 566 and 567 showed some homology to previously identified gene sequences. The sequences of SEQ ID NO: 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 559, 564, 564 and 568 showed some homology to previously isolated ESTs.

Example 2

ISOLATION OF TUMOR POLYPEPTIDES
USING SCID MOUSE-PASSAGED TUMOR RNA

Human colon tumor antigens were obtained using SCID mouse passaged colon tumor RNA as follows. Human colon tumor was implanted in SCID mice and harvested, as described in Patent Application Serial No. 08/556,659 filed 11/13/95, U.S. Patent No. 5,986,170. First strand cDNA was synthesized from poly A+ RNA from three SCID mouse-passaged colon tumors using a Lambda ZAP Express cDNA synthesis kit (Stratagene). The reactions were pooled and digested with RNase A, T1 and H to cleave the RNA and then treated with NaOH to degrade the RNA. The resulting cDNA was annealed with biotinylated (Vector Labs, Inc., Burlingame, CA) cDNA from a normal resting PBMC plasmid library (constructed from Superscript plasmid System, Gibco BRL), and subtracted with streptavidin by phenol/chloroform extraction. Second strand cDNA was synthesized from the subtracted first strand cDNA and digested with S1 nuclease (Gibco BRL). The cDNA was blunted with Pfu polymerase and EcoRI adaptors (Stratagene) were ligated to the ends. The cDNA was phosphorylated with T4 polynucleotide kinase, digested with restriction endonuclease XhoI, and size selected with Sephacryl S-400 (Sigma). Fractions were pooled, ligated to Lambda ZAP Express arms (Stratagene) and packaged with Gigapack Gold III extract (Stratagene). Random plaques were picked,

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phagemid was excised, transformed into XLOLR cells (Stratagene) and resulting plasmid DNA (Qiagen Inc., Valencia, CA) was sequenced as described above.

The determined cDNA sequences for 17 clones isolated as described above are provided in SEQ ID NO: 133-151, wherein 133 and 134 represent partial sequences of a clone referred to as CoSub-3 and SEQ ID NO: 135 and 136 represent partial sequences of a clone referred to as CoSub-13. These sequences were compared with those in the public databases as described above. The sequences of SEQ ID NO: 139 and 149 showed no significant homologies to any previously identified sequences. The sequences of SEQ ID NO: 138, 140, 141, 142, 143, 148 and 149 showed some homology to previously isolated expressed sequence tags (ESTs). The sequences of SEQ ID NO: 133-137, 144-147, 150 and 151 showed some homology to previously isolated gene sequences.

The determined cDNA sequences for an additional 46 clones isolated as described above, are provided in SEQ ID NO: 569-616, wherein SEQ ID NO: 573 and 574 represent the 3' and 5' determined cDNA sequences, respectively, for clone CS1-106, and SEQ ID NO: 579 and 580 represent the determined 3' and 5' cDNA sequences, respectively, for clone CS1-124. Comparison of the isolated sequences with those in the public databases revealed no significant homologies to the sequences of SEQ ID NO: 580, 585, 610 and 613. The sequences of SEQ ID NO: 569, 574-577, 584, 587, 592, 595, 598, 603 and 608 showed some homology to previously isolated ESTs, while the sequences of SEQ ID NO: 570-573, 578, 581-583, 586, 588-591, 593, 594, 596, 597, 599-602, 604-607, 609, 611, 612 and 514-616 showed some homology to previously isolated gene sequences.

Example 3

USE OF MOUSE ANTISERA TO IDENTIFY DNA SEQUENCES
ENCODING COLON TUMOR ANTIGENS

This example illustrates the isolation of cDNA sequences encoding colon tumor antigens by screening of colon tumor cDNA libraries with mouse anti-tumor sera.

A cDNA expression library was prepared from SCID mouse-passaged

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human colon tumor poly A+ RNA using a Stratagene (La Jolla, CA) Lambda ZAP Express kit, following the manufacturer's instructions. Sera was obtained from the colon tumor-bearing SCID mouse. This serum was injected into normal mice to produce anti-colon tumor serum. Approximately 600,000 PFUs were screened from the unamplified library using this antiserum. Using a goat anti-mouse IgG-A-M (H+L) alkaline phosphatase second antibody developed with NBT/BCIP (BRL Labs.), positive plaques were identified. Phage was purified and phagemid excised for several clones with inserts in a pBK-CMV vector for expression in prokaryotic or eukaryotic cells.

The determined cDNA sequences for 46 of the isolated clones are provided in SEQ ID NO: 152-197. The predicted amino acid sequences for the cDNA sequences of SEQ ID NO: 187, 188, 189, 190, 194, 195 and 197 are provided in SEQ ID NO: 198-204, respectively. The determined cDNA sequences were compared with those in the public database as described above. The sequences of SEQ ID NO: 156, 168, 184, 189, 192 and 196 showed some homology to previously isolated ESTs. The sequences of SEQ ID NO: 152-155, 157-167, 169-182, 183, 185-188, 190, 194, 195 and 197 showed some homology to previously identified genes.

The determined cDNA sequences for an additional eleven clones isolated as described above, are provided in SEQ ID NO: 617-627. Comparison of these sequences with those in the public database as described above revealed no known homologies to SEQ ID NO: 621 and 623. The sequences of SEQ ID NO: 622 and 626 were found to show some homology to previously isolated ESTs, while the sequences of SEQ ID NO: 617-620, 624, 625 and 627 showed some homology to previously identified genes.

In further studies, a cDNA library was prepared from SCID-mouse grown colon tumors and screened with mouse anti-SCID serum as described above. Briefly first strand cDNA was synthesized from poly A+ RNA from three SCID mouse-grown human colon tumors using a Lambda ZAP Express cDNA synthesis kit (Stratagene). The reactions were pooled and digested with RNase A, T1 and H to cleave the RNA and then treated with NaOH to degrade the RNA. The cDNA was annealed with biotinylated cDNA from a normal resting PBMC plasmid library

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(constructed from Superscript plasmid system; Gibco BRL) and subtracted with streptavidin by phenol/chloroform extraction. Second strand cDNA was synthesized from the subtracted first strand cDNA and digested with S1 nuclease. The cDNA was blunted with Pfu polymerase and EcoRI adaptors were ligated to the ends. The cDNA

5   was phosphorylated with T4 polynucleotide kinase, digested with restriction endonuclease XhoI, and size selected with Sephacryl S-400 (Sigma). Fractions were pooled, ligated to Lambda ZAP Express arms (Stratagene) and packaged with Gigapack Gold III extract (Stratagene). The resulting library was screened with a mouse antiserum raised against serum from SCID mice containing human colon

10   tumors, including the three tumors used to prepare the cDNA libraries.

The determined cDNA for one clone isolated using this procedure is provided in SEQ ID NO: 630. This clone was found to show homology to a previously identified gene. The amino acid sequence encoded by the clone of SEQ ID NO: 630 is provided in SEQ ID NO: 631.

15   In subsequent studies, an additional cDNA library was prepared from a SCID-passaged human colon tumor and screened with a mouse antiserum raised against serum from the SCID mouse containing the colon tumor. The determined cDNA sequences for 51 clones isolated in these studies are provided in SEQ ID NO: 632-682. Comparison of these sequences with those in the public databases revealed

20   no significant homologies to the sequences of SEQ ID NO: 648 and 668. The sequence of SEQ ID NO: 642 showed some homology to previously isolated ESTs. The sequences of SEQ ID NO: 632-641, 643-647, 649-667 and 669-682 were found to show some homology to previously identified genes. SEQ ID NO: 684 and SEQ ID NO: 690 showed homology to human NADH/NADPH thyroid oxidase p138-tox

25   mRNA.

Example 4

ISOLATION AND CHARACTERIZATION OF COLON TUMOR
POLYPEPTIDES BY CONVENTIONAL SUBTRACTION

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Two cDNA libraries were constructed and used to create a subtracted cDNA library as follows.

Using the GibcoBRL Superscript Plasmid System with minor modifications, two cDNA libraries were created. The first library, referred to as 5 CTCL, was prepared from a pool of mRNA samples from three colon adenocarcinoma tissue samples. Two of the samples were described as Duke's stage C and one as Duke's stage B. All three samples were grade III in histological status. A second library (referred to as DriverLibpcDNA3.1+) was prepared from a pool of normal tissues, namely liver, pancreas, skin, bone marrow, resting PBMC, stomach and brain. 10 Both libraries were prepared using the manufacturer's instructions with the following modifications: an EcoRI-NotI 5' cDNA adapter was used instead of the provided reagent; the vector pCDNA3.1(+) (Invitrogen) was substituted for the pSPORT vector; and the ligated DNA molecules were transformed into ElectroMaxDH10B electrocompetent cells. Clones from the libraries were analyzed by restriction digest 15 and sequencing to determine average insert size, quality of the library and complexity of the library. DNA was prepared from each library and digested.

The driver DNA was biotinylated and hybridized with the colon library tester DNA at a ratio of 10:1. After two rounds of hybridizations, streptavidin incubations and extractions, the remaining colon cDNAs were size-selected by 20 column chromatography and cloned into the pCMV-Script vector from Stratagene. Clones from this subtracted library (referred to as CTCL-S1) were characterized as described above for the unsubtracted libraries.

The determined cDNA sequences for 20 clones isolated from the CTCL-S1 library are provided in SEQ ID NO: 462-479, 628 and 629. Comparison of 25 these sequences with those in the public databases, as described above, revealed no significant homologies to the sequences of SEQ ID NO: 476, 477 and 479. The remaining sequences showed some homology to previously identified genes.

In further studies, a cDNA library was prepared from a pool of mRNA from three metastatic colon adenocarcinomas derived from liver tissue samples. All 30 samples were described as Duke's stage D. Conventional subtraction was performed as described above, using the DriverLibpcDNA3.1+ library described above as the

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driver. The resulting subtracted library (referred to as CMCL-S1) was characterized by isolating a set of clones for restriction analysis and sequencing.

The determined cDNA sequences for 7 clones isolated from the CMCL-S1 library are provided in SEQ ID NO: 480-486. Comparison of these sequences with those in the public databases revealed no significant homologies to the sequence of SEQ ID NO: 483. The sequences of SEQ ID NO: 480-482 and 484-486 were found to show some homology to previously identified genes.

Example 5

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems Division 430A peptide synthesizer using FMOC chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

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CLAIMS

10   1.   An isolated polypeptide, comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34,
15   36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101,
            109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168,
            170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215,
            218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248,
            250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279,
20   282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320,
            322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-
            378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-
            441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488,
            491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553,
25   556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585,
            587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648,
            668, 682-684, 686, 690-691, and 694-1081;

(b) sequences that hybridize to a sequence recited in any one of SEQ
            ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52,
30   54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-
            132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-

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193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233,

234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259,

260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298,

300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345,

347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-

417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454,

455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500,

510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565,

568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603,

608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-

691, and 694-1081 under moderately stringent conditions; and

(c) complements of sequences of (a) or (b).

2.   An isolated polypeptide according to claim 1, wherein the
polypeptide comprises an amino acid sequence that is encoded by a polynucleotide
sequence recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38,
40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-
132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207,
210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248,
250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294,
298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358,
361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-
436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492,
497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568,
569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623,
626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any.of
the foregoing polynucleotide sequences.

3.   An isolated polypeptide comprising a sequence recited in any
one of SEQ ID NOs: 122 and 198-204.

4.   An isolated polynucleotide encoding at least 15 amino acid residues of a colon tumor protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID Nos: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing sequences.

5.   An isolated polynucleotide encoding a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:_ 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-

691, and 694-1081, or a complement of any of the foregoing sequences.

6.   An isolated polynucleotide, comprising a sequence recited in any one of SEQ ID NOs:_ 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081.

7.   An isolated polynucleotide, comprising a sequence that hybridizes to a sequence recited in any one of SEQ ID NOs:_2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081 under moderately stringent conditions.

8.   An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

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9.   An expression vector, comprising a polynucleotide according to any one of claims claim 4-8.

5   10.   A host cell transformed or transfected with an expression vector according to claim 9.

11.   An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a colon tumor protein that comprises an amino acid sequence that
10   is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:_ 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-
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20   603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing polynucleotide sequences.

12.   A fusion protein, comprising at least one polypeptide according to claim 1.
25

13.   A fusion protein according to claim 12, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

30   14.   A fusion protein according to claim 12, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of

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claim 1.

15.   A fusion protein according to claim 12, wherein the fusion protein comprises an affinity tag.

5

16.   An isolated polynucleotide encoding a fusion protein according to claim 12.

17.   A pharmaceutical composition, comprising a physiologically acceptable carrier and at least one component selected from the group consisting of:

(a)   a polypeptide according to claim 1;

(b)   a polynucleotide according to claim 4;

(c)   an antibody according to claim 11;

(d)   a fusion protein according to claim 12; and

(e)   a polynucleotide according to claim 16.

18.   A vaccine comprising an immunostimulant and at least one component selected from the group consisting of:

(a)   a polypeptide according to claim 1;

(b)   a polynucleotide according to claim 4;

(c)   an antibody according to claim 11;

(d)   a fusion protein according to claim 12; and,

(e)   a polynucleotide according to claim 16.

19.   A vaccine according to claim 18, wherein the immunostimulant is an adjuvant.

20.   A vaccine according to any claim 18, wherein the immunostimulant induces a predominantly Type I response.

21.   A method for inhibiting the development of a cancer in a

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patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 17.

22.   A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 18.

23.   A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

24.   A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.

25.   A vaccine comprising an antigen-presenting cell that expresses a polypeptide comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

    (a)   sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

    (b)   sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

    (c)   complements of sequences of (i) or (ii);

           in combination with an immunostimulant.

26.   A vaccine according to claim 25, wherein the immunostimulant is an adjuvant.

27.   A vaccine according to claim 25, wherein the immunostimulant induces a predominantly Type I response.

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28.   A vaccine according to claim 25, wherein the antigen-presenting cell is a dendritic cell.

29.   A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a)   sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(b)   sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(c)   complements of sequences of (i) or (ii)encoded by a polynucleotide recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

and thereby inhibiting the development of a cancer in the patient.

30.   A method according to claim 29, wherein the antigen-presenting cell is a dendritic cell.

31.   A method according to any one of claims 21, 22 and 29, wherein the cancer is colon cancer.

32.   A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i)   polynucleotides recited in any one of SEQ ID NOs: 1-

121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081; and

(ii)   complements of the foregoing polynucleotides;

wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the antigen from the sample.

33.   A method according to claim 32, wherein the biological sample is blood or a fraction thereof.

34.   A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 32.

35.   A method for stimulating and/or expanding T cells specific for a colon tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

(a)   polypeptides comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i)   sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(ii)   sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(iii)   complements of sequences of (i) or (ii);

(b)   polynucleotides encoding a polypeptide of (a); and

(c)   antigen presenting cells that express a polypeptide of (a);

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

36.   An isolated T cell population, comprising T cells prepared

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according

to the method of claim 35.

37.   A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 36.

38.   A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a)   incubating CD4$^+$ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of:

(i)   polypeptides comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(1)   sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081

(2)   sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(3)   complements of sequences of (1) or (2);

(ii)   polynucleotides encoding a polypeptide of (i); and

(iii)   antigen presenting cells that expresses a polypeptide of (i);

such that T cells proliferate; and

(b)   administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

39.   A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a)   incubating CD4$^+$ and/or CD8+ T cells isolated from a patient

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with at least one component selected from the group consisting of:

(i)   polypeptides comprising at least an immunogenic portion of a colon tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(1)   sequences recited in SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081;

(2)   sequences that hybridize to a sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 under moderately stringent conditions; and

(3)   complements of sequences of (1) or (2);

(ii)   polynucleotides encoding a polypeptide of (i); and

(iii)   antigen presenting cells that express a polypeptide of (i); such that T cells proliferate;

(b)   cloning at least one proliferated cell to provide cloned T cells; and

(c)   administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

40.   A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a)   contacting a biological sample obtained from a patient with a binding agent that binds to a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b)   detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c)   comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

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41.   A method according to claim 40, wherein the binding agent is an antibody.

5   42.   A method according to claim 43, wherein the antibody is a monoclonal antibody.

43.   A method according to claim 40, wherein the cancer is colon cancer.

10

44.   A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a)   contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a colon tumor protein, wherein the

15 tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b)   detecting in the sample an amount of polypeptide that binds to

20 the binding agent;

(c)   repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and .

(d)   comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in

25 the patient.

45.   A method according to claim 44, wherein the binding agent is an antibody.

30   46.   A method according to claim 45, wherein the antibody is a monoclonal antibody.

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47.   A method according to claim 44, wherein the cancer is a colon cancer.

5   48.   A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a)   contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a

10   polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b)   detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

15   (c)   comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

49.   A method according to claim 48, wherein the amount of

20   polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

50.   A method according to claim 48, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a

25   hybridization assay.

51.   A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a)   contacting a biological sample obtained from a patient with an

30   oligonucleotide that hybridizes to a polynucleotide that encodes a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a

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polynucleotide sequence recited in any one of SEQ ID NOs: 1-121, 123-197, 205-630 and 632-684, 686, 690-691, and 694-1081 or a complement of any of the foregoing polynucleotide sequences;

(b)   detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c)   repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d)   comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

52.   A method according to claim 51, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

53.   A method according to claim 51, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

54.   A diagnostic kit, comprising:

(a)   one or more antibodies according to claim 11; and

(b)   a detection reagent comprising a reporter group.

55.   A kit according to claim 54, wherein the antibodies are immobilized on a solid support.

56.   A kit according to claim 54, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

57.   A kit according to claim 54, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent

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groups, enzymes, biotin and dye particles.

58.   An oligonucleotide comprising 10 to 40 contiguous nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a colon tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081, or a complement of any of the foregoing polynucleotides.

59.   A oligonucleotide according to claim 58, wherein the oligonucleotide comprises 10-40 contiguous nucleotides recited in any one of SEQ ID NOs: 2, 8, 15, 16, 22, 24, 30, 32-34, 36, 38, 40, 41, 46-49, 52, 54, 59, 60, 65-69, 79, 89, 90, 93, 99-101, 109-111, 116-119, 123-132, 138-142, 143, 148, 149, 156, 168, 170-182, 184, 189, 191-193, 196, 205, 207, 210-212, 214, 215, 218, 224-226, 228, 233, 234, 236, 238, 241, 242, 245, 246, 248, 250, 253, 254, 256, 259, 260, 262, 263, 266, 267, 270-273, 279, 282, 291, 293, 294, 298, 300, 302, 303, 310-313, 315, 317, 320, 322, 324, 332-335, 345, 347, 356, 358, 361, 362, 366, 369, 371-378, 380-404, 406, 409-417, 419-423, 425, 427-429, 433-436, 438-441, 443, 446-451, 454, 455, 457-461, 476, 477, 479, 483, 488, 491, 492, 497, 498, 500, 510, 519, 527, 528, 543, 545, 547, 553, 556, 559, 561, 564, 565, 568, 569, 574-577, 579, 580, 584, 585, 587, 592, 595, 598, 603, 608, 610, 613, 621-623, 626, 642, 648, 668, 682-684, 686, 690-691, and 694-1081.

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60.   A diagnostic kit, comprising:

(a)   an oligonucleotide according to claim 59; and

(b)   a diagnostic reagent for use in a polymerase chain reaction or

5   hybridization assay.

1

SEQUENCE LISTING

<110> Corixa Corporation
      Xu, Jiangchun
      Lodes, Michael J.
      Secrist; Heather
      Benson, Darin R.
      Meagher, Madeleine Joy
      King, Gordon E.

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4

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tctccctcct cccccacatg cacaaggctc acatctcatt atggtgkcgg cccatgtcac        300
attaaagtgt gatacttkgg ttttgaaaac attcaaacag tctctgtgga aatctggaga        360
gaaattggcg gagagctgcc gtggtgcatt cctcctgtag tgcttcaagn taatgcttca        420
tcctttntta ataacttttg atagacaggg gctagtcgca cagacctctg ggaagccctg        480
gaaaacgctg atgcttgttt gaagatctca agcgcagagt ctgcaagttc atcccctctt        540
tcctgaggtc tgttggctgg aggctgcaga acattggtga tgacatggac cacgccattt        600
gtgg                                                                     604


        <210> 10
        <211> 473
        <212> DNA
        <213> Homo sapien

        <400> 10
tcgagaagat ccctagtgag actttgaacc gtatcctggg cgacccagaa gccctgagag         60
acctgctgaa caaccacatc ttgaagtcag ctatgtgtgc tgaagccatc gttgcggggc        120
tgtctgtgga gaccctggag ggcacgacac tggaggtggg ctgcagcggg gacatgctca        180
ctatcaacgg gaaggcgatc atctccaata aagacatcct agccaccaac ggggtgatcc        240
actacattga tgagctactc atcccagact cagccaagac actatttgaa ttggctgcag        300
agtctgatgt gtccacagcc attgaccttt tcagacaagc cggcctcggc aatcatctct        360
ctggaagtga gcggttgacc ctcctgggct cccctgaatt ctgtattcaa agatggaacc        420
cctccaattg atgcccatac aaggaatttg cttcggaacc acataattaa aga             473


        <210> 11
        <211> 411
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(411)
        <223> n = A,T,C or G

        <400> 11
tcctcattgg tcggggccaa aagcgtgtac tggccgttac cttcaagcat cgtgttgagc         60
cctgatgcag ccacagcagc ccgaagggtc tcaaaggtgt cctcgatctc aatgatctgc        120
tggatgttgt tggtgatggt ggagatgacc ttatcgatga ggtgcaccac cccgttggtt        180
gcatggtggt cggctttyar carccgggca cagttcacag ttacaatccc attaggatag        240
tggtggatct nggatgttgg aattctggta catagnaggt gaggggtcat gcccgtgttt        300
cagctcatca gtcaggactc gcctgcccac catatggtaa gcsgragggc atttgagcag        360
ctcaatgttt gacattgctg gaccagggga gttccagcac ttctangang a               411


        <210> 12
        <211> 560
        <212> DNA
        <213> Homo sapien

        <400> 12
tacttgcctg gagatwgcyt tykckwtmtg ytcwrawgtc cgtggataca gaaatctctg         60
caggcaagtt gctccagagc atattgcagg acaagcctgt aacgaatagt taaattcacg        120
gcatctggat tcctaatcct tttccgaaat ggcaggtgtg agtgcctgta taaaatattc        180
tatgtttacc ttcaacttct tgttctggct atgtggtatc ttgatcctag cattagcaat        240
atgggtacga gtaagcaatg actctcaagc aatttttggt tctgaagatg taggctctag        300
ctcctacgtt gctgtggaca tattgattgc tgtaggtgcc atcatcatga ttctgggctt        360
cctggatgc tgcggtgcta taaaagaaag tcgctgcatg cttctgttgt ttttcatagg        420
cttgcttctg atcctgctcc tgcaggtggg cgacaggtat cctaggagct gttttcaaat        480
ctaagtctga tcgcattgtg aatgaaactc tctatgaaaa cacaaagctt ttgagcgcca        540
cagggaaag tgaaaaacaa                                                      560
```

5

```
        <210> 13
        <211> 150
        <212> DNA
        <213> Homo sapien

        <400> 13
gggcaggctg  tctttttaaa  atgtctcggc  tagctagacc  acagatatct  tctagacata       60
ttgaacacat  ttaagatttg  agggatataa  gggaaaatga  tatgaatgtg  tatttttact      120.
caaaataaaa  gtaactgttt  acgttggtga                                           150

        <210> 14
        <211> 403
        <212> DNA
        <213> Homo sapien

        <400> 14
ctgctgcctg  tggcgtgtgt  gggctggatc  ccttgaaggc  tgagtttttg  agggcagaaa       60
gctagctatg  ggtagccagg  tgttacaaag  gtgctgctcc  ttctccaacc  cctacttggt      120
ttccctcacc  ccaagcctca  tgttcatacc  agccagtggg  ttcagcagaa  cgcatgacac  .   180
cttatcacct  ccctccttgg  gtgagctctg  aacaccagct  ttggcccctc  cacagtaagg      240
ctgctacatc  aggggcaacc  ctggctctat  cattttcctt  ttttgccaaa  aggaccagta      300
gcataggtga  gccctgagca  ctaaaaggag  gggtccctga  agctttccca  ctatagtgtg      360
gagttctgtc  cctgaggtgg  gtacagcagc  cttggttcct  ctg                         403

        <210> 15
        <211> 688
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(688)
        <223> n = A,T,C or G

        <400> 15
caaagcacat  tttaatcatt  tattttaaaa  gggggagtaa  agcatttaaa  ctgccaatcc       60
tatagactag  gacttgaaca  tcaaaggaaa  aatagacaaa  gactagatga  taaagtcatt      120
caaaagcaca  gaagcacatc  acatacacca  gcaaggtttc  caactactgc  actgattaac      180
tagatactct  caatagcttt  tctatagctc  gtcctagaaa  aaaaaattaa  attttcattt      240
tcttacaagt  tccaggctta  aacaaaggca  aaaattacat  gcaacaactg  atacactcat      300
aagttgcaca  tatgctccaa  ggtctttatt  agataacaat  aaatgctagc  actttgtcac      360
tgccatcaga  ttttccttat  agtcttagag  tcatgtaaat  aaaagttcca  taatgaaatt      420
aaagaaaatt  aattttttcta  atcttagatc  agttccatag  aaaactatta  attttttttaa      480
agtaggcagt  agaaggggt  tggtgggggg  tggaattggt  tagtaagtct  ggttctaatc      540
ttctgagctg  cctttggaag  gaagttatga  ggtagaagat  tctactgact  tttagtaagg      600
tggacaatga  gagaaaagaa  aaagcaggtg  cctcatcnnc  agatccttnt  ggtatttatn      660
tgccangtnc  nanntaatnc  atanaaag                                           688

        <210> 16
        <211> 408
        <212> DNA
        <213> Homo sapien

        <400> 16
caggtcatca  agatgactta  caggatgtaa  tagggagagc  tgtcgagatt  ggtgttaaaa       60
agtttatgat  tacaggtgga  aatctacaag  acagtaaaga  tgcactgcat  ttggcacaaa      120
caaatggtat  gttttttcagt  acagttggat  gtcgtcctac  aagatgtggt  gaatttgaaa      180
```

```
agaataaccc tgatctttac ttaaaggagt tgctaaatct tgctgaaaac aataaaggga      240
aagttgtggc aataggagaa tgcggacttg attttgaccc gactgcagtt ttgtcccaaa      300
gatactcaac tcaaatattt tgaaaaacag tttgaactgt cagaacaaac aaaattacca      360
atgtttcttc attgtccgaa actcacatgc tgaatttttg gacataat                  408
```

        <210> 17
        <211> 407
        <212> DNA
        <213> Homo sapien

        <400> 17
```
ggtcctgggg aggccctagg ggagcaccgt gatggagagg acagagcagg ggctccagca       60
ccttctttct ggactggcgt tcacctccct gctcagtgct tgggctccac gggcaggggt      120
cagagcactc cctaatttat gtgctatata aatatgtcag atgtacatag agatctattt      180
tttctaaaac attcccctyc ccactcctct cccacagagt gctggactgt tccaggccct      240
ccagtgggct gatgctggga cccttaggat ggggctccca gctcctttct cctgtgaatg      300
gaggcagaag acctccaata aagtgccttc tgggcttttt ctaacctttg tcttagctac      360
ctgtgtactg aaatttgggc ctttggatcg aatatggtca agaggtt                   407
```

        <210> 18
        <211> 405
        <212> DNA
        <213> Homo sapien

        <400> 18
```
tgaagagtca acttgggcct ggaggactga taaagtttgt gattttgagg gcctctaaaa       60
gtattaaagc agcggcagcc gctgcacgca gacatgaggg ctaggttaaa acagtaagat      120
caagttgttt ggacagaaag gctacagagt gtggtcctgg ctcttgtgta agaattacga      180
ccacgctaac catgcctagg aaggaaagga gttattgttt tgtagaaagg tgctggggtt      240
tgagagatca gtcggacacg attggcaggg agagcacgtg tgtttttatg agaattatgc      300
ccgagatagg taacagatga ggaagaaatt tgggcttgat tgaagtaatg ggggctgtct      360
gtgaagcttt gcagcagtac agcctaggta atttgctgag cctaa                     405
```

        <210> 19
        <211> 401
        <212> DNA
        <213> Homo sapien

        <400> 19
```
tcctgacatt cctgccttct tatattaata agacaaataa aacaaaatag tgttgaagtg       60
ttggggcagc gaaaattttt gggggggtggt atggagagat aatgggcgat gtttctcagg      120
gctgcttcaa gcgggattag gggcggcgtg ggagcctaga gtgggagaga ttaagctgaa      180
gggaggtctt gtggtaaggg gtgatatcat ggggatgtta gaagaaacat ttgtcgtata      240
gaatgattgg tgatggcctg gatacggttt tggatgggttt gagaagctaa atggaagata     300
caaggtccga ataaaaggag gagaaaaatg ggtattaaat gtctaagaat tgggaggacc      360
taggacatct gattagagag tgcctaggga gattcagcat a                          401
```

        <210> 20
        <211> 331
        <212> DNA
        <213> Homo sapien

        <400> 20
```
aggtccagct ctgtctcata cttgactcta aagtcatcag cagcaagacg ggcattgtca       60
atctgcagaa cgatgcgggc attgtccaca gtatttgcga agatctgagc cctcaggtcc      120
tcgatgatct tgaagtaatg gctccagtct ctgacctggg gtcccttctt ctccaagtgc      180
tcccggattt tgctctccag cctccggttc tcggtctcca ggctcctcac tctgtccagg      240
taagaggcca ggcggtcgtt caggctttgc atggtctcct tctcgttctg gatgcctccc      300
```

```
attcctgcca gaccccggc tatcccggtg g                                    331
```

```
        <210> 21
        <211> 346
        <212> DNA
        <213> Homo sapien

        <220> .
        <221> misc_feature
        <222> (1)...(346)
        <223> n = A,T,C or G

        <400> 21
ggtccaccac ttgtacccga tatggacttc cggcttctct gtccaatgga gccacactaa     60
agatctcacc agtcacgtgg tcaattttaa gccaacctct tgtgtctccc ctcagtgaat    120
agcttatgtc cagaccttct ggatccttgg cagtcacatt gcccacttta gtgcctatag    180
ctacatcctc actgactttc gcttggaata cgtgttggga aaattgaggt gcttcattca    240
catctgtcac aataagncgt gaacttggca aaagaacttg cattgtactt cacaccaaac    300
actagaggct caggattttc tgctttgaac acaatgttgg aaacag                   346

        <210> 22
        <211> 360
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(360)
        <223> n = A,T,C or G

        <400> 22
gaagactccc tctctcggaa gccggatccc gagccgggca ggatggatca ccaccagccg     60
gggactgggc gctaccaggt gcttcttaat gaagaggata actcagaatc atcggctata    120
gagcagccac ctacttcaaa cccagcaccc gcagattgtg caggctgcgt cttcagcacc    180
agcacttgaa actgactctt cccctccacc atatagtagt attactggtg gaagtaccta    240
caacttcaga tacagaagtt tacggtgagt tttatcccgt gccacctccc tatagcgttg    300
ctacctctct tcctacnwta cgatgaaagc tgagaaggct aaagctgctg caatggcatg    360

        <210> 23
        <211> 251
        <212> DNA
        <213> Homo sapien

        <400> 23
ggcggagctc cacgacgagc tggaaaagga accttttgag gatggctttg caaatgggga     60
agaaagtact ccaaccagag atgctgtggt cacgtatact gcagaaagta aaggagtcgt    120
gaagtttggc tggatcaagg gtgtattagt acgttgtatg ttaaacattt ggggtgtgat    180
gcttttcatt agattgtcat ggattgtggg tcaagctgga ataggtctat cagtccttgt    240
aataatgatg g                                                        251

        <210> 24
        <211> 421
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(421)
```

8

```
        <223> n = A,T,C or G

        <400> 24
caggtctttc ccaggtgttg actccagctc cagcttcagc tccagctcca ggtcgggctc      60
cagctccagc cgcagcttar gcagcgggag gttctgtgtc ccagttgttt tccaatttca     120
ccggctcccg tggatgamcg ygggacctgy caswgctcct gtktycctgc yagsacacca     180
cnytttyccg tggacacrar kggaacckct tggaattcac agctyatgtt ctttctcara     240
agtttgagaa agaactttct aaagtgaggg aatatgtcca attaattagt gtgtatgaaa     300
agaaactgtt aaacctaact gtccgaattg acatcatgga raaaggatac catttcttac     360
actgaactgg acttcgagct gatcaaggta gaagtgaagg agatggaaaa actggtcata     420
c                                                                     421

        <210> 25
        <211> 381
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(381)
        <223> n = A,T,C or G

        <400> 25
gaactttttg tttctttatt ttcaatattt gtcttattaa tatttttctt attttataat      60
gcaattacaa caatttagga nacaaaacaa tataaacaaa agaatgttaa atagtttttt     120
ttaaaaaata gcttgttgct tgcaanaaag tccatataat cttattcccc cccaaatata     180
attttatact ttgcactaaa ccaaaatagc ttatggaaaa ttagtattaa atagctaaac     240
acagaaaacc tacagctata aataacataa aatacagttt aactttaatg ngatgcttaa     300
acaaagcaaa ctatgatgca atatgaatca acttcattaa ttggacaagt ccagnggagg     360
cacaaattag ataagcacta a                                               381

        <210> 26
        <211> 401
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(401)
        <223> n = A,T,C or G

        <400> 26
ggaaaaggga ctggcctctc tgaagagtga gatgagggaa gtggaaggag agctggaaag      60
gaaggagctg gagtttgaca cgaatatgga tgcagtacag atggtgatta cagaagccca     120
gaaggttgat accagaagcc aagaacgctg gggttacaat ccaagacaca ctcaacacat     180
tagacgggct cctgcattct gatggaccaa ccttttcang tggtaagatt gaagangggg     240
cctgggctta cctgggaagc aaaaactttt cccganccaa ggaacccagg attcaaccan     300
gcnacttgcn ggccaaggaa ggcanaactn ggaanaaaag gccccttaag caaaagggnc     360
accttcattt gctnggaaan cagcctttan ttggaatctt g                         401

        <210> 27
        <211> 383
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(383)
```

9

```
<223> n = A,T,C or G

<400> 27
aattgcaact ggactttttat tgggcagtta cnacaacnaa tgttttcana aaaatatttg        60
gaaaaaatat accacttcat agctaagtct tacagagaan aggatttgct aataaaactt       120
aagttttgaa aattaagatg cnggtanagc ttctgaacta atgcccacag ctccaaggaa       180
nacatgtcct atttagttat tcaaatacca gttgagggca ttgtgattaa gcaaacaata       240
tatttgttan aactttgntt ttaaattact gntncttgac attacttata aaggagnctc       300
taactttcga tttctaaaac tatgtaatac aaaagtatan ntttccccat tttgataaaa       360
gggccnanga tactgantag gaa                                               383

<210> 28
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 28
ggtcgcgttt cccctggctc acagtctgcc attatttgca tttttaaatg aagaaaagtt        60
taacgtggat ggatggacag tttacaatcc agtggaagaa tacaggaggc agggcttgcc       120
caatcaccat tggagaataa cttttattaa taagtgctat gagctctgcg acacttaccc       180
tgctcttttg gtggttccgt atcgtgcctc anatgatgac ctccggagag ttgcaacttt       240
taggtcccga aatcgaattc cagtgctgtc atggattcat ccagaaaata agacggtcat       300
tgtgcgttgc agtcagcctc ttgtcggtat gagtgggaaa cgaaataaag atgatgagaa       360
atatctcgat gttatcaggg agactaataa acaaatttct a                          401

<210> 29
<211> 401
<212> DNA
<213> Homo sapien

<400> 29
atatgagttt gccatctcca tggatgccat ttcaatgcct tcagggtaat cattctctcc        60
ccaaagactg cccacggggt catcactcct gtgacgaaat gagggctgga ttgaagatgt       120
tctgctgagc acccccctgg tcatctttgg ggtctcagaa gagccataat catgaccatt       180
ctcagcatct gaataatcag gttctctcca agtgcttggc aagttctgat tgtcctcagc       240
actgggatag tctggctccc caaaaaaggg tggagagtta ggttgaatgt cagcgcctgg       300
ataatcaggc tttcccagag agtctgcgta tggattgatt ctaaaacttg tatgttccag       360
attctttctg gatcctggat ggttcaaatt ggctctgggt c                          401

<210> 30
<211> 401
<212> DNA
<213> Homo sapien

<400> 30
cctgaactat ttattaaaaa catgaccact cttggctatt gaagatgctg cctgtatttg        60
agagactgcc atacataata tatgacttcc tagggatctg aaatccataa actaagagaa       120
actgtgtata gcttacctga acaggaatcc ttactgatat ttatagaaca gttgatttcc       180
cccatcccca gtttatggat atgctgcttt aaacttggaa gggggagaca ggaagtttta       240
attgttctga ctaaacttag gagttgagct aggagtgcgt tcatggtttc ttcactaaca       300
gaggaattat gctttgcact acgtccctcc aagtgaagac agactgtttt agacagactt       360
tttaaaatgg tgccctacca ttgacacatg cagaaattgg t                          401
```

10

```
<210> 31
<211> 297
<212> DNA
<213> Homo sapien

<400> 31
acctccatta atgccaggtg ttcctcctct gatgccagga atgccaccag ttatgccagg      60
catgccacct ggattgcatc atcagagaaa atacacccag tcattttgcg gtgaaaacat     120
aatgatgcca atgggtggaa tgatgccacc tggaccagga ataccacctc tgatgcctgg     180
aatgccacca ggtatgcccc cacctgttcc acgtcctgga attcctccaa tgactcaagc     240
acaggctgtt tcagcgccag gtattcttaa tagaccacct gcaccaacag caactgt        297


<210> 32
<211> 401
<212> DNA
<213> Homo sapien

<400> 32
caaacctgga gccaaaaagg acacaaagga ctctcgaccc aaactgcccc agaccctctc      60
cagaggttgg ggtgaccaac tcatctggac tcagacatat gaagaagctc tatataaatc     120
caagacaagc aacaaaccct tgatgattat tcatcacttg ggtgagtgcc cacacagtca     180
agctttaaag aaagtgtttg ctgaaaataa agaaatccag aaattggcag agcagtttgt     240
cctcctcaat ctggtttatg aaacaactga caaacacctt tctcctgatg gccagtatgt     300
ccccaggatt atgtttgttg acccatctct gacagttaga gcccgatatc actggaagat     360
attcaaaccg tctctatgct tacgaacctg cagatacagc t                         401


<210> 33
<211> 401
<212> DNA
<213> Homo sapien

<400> 33
agcagaggga caggaatcat tcggccactg ttcagacggg agccacaccc ttctccaatc      60
caagcctggc cccagaagat cacaaagagc caaagaaact ggcaggtgtc cacgcgctcc     120
aggccagtga gttggttgtc acttactttt tctgtgggga agaaattcca taccggagga     180
tgctgaaggc tcagagcttg accctgggcc actttaaaga gcagctcagc aaaaagggaa     240
attataggta ttacttcaaa aaagcaagcg atgagtttgc ctgtggagcg gtgtttgagg     300
agatctggga ggatgagacg gtgctcccga tgtatgaagg ccggattctg ggcaaagtgg     360
agcggatcga ttgagccctg gggtctggct ttggtgaact g                         401


<210> 34
<211> 401
<212> DNA
<213> Homo sapien

<400> 34
aacaatggct atgaaggcat tgtcgttgca atcgacccca atgtgccaga agatgaaaca      60
ctcattcaac aaataaagga catggtgacc caggcatctc tgtatctgtt tgaagctaca     120
ggaaagcgat tttatttcaa aaatgttgcc attttgattc ctgaaacatg gaagacaaag     180
gctgactatg tgagaccaaa acttgagacc tacaaaaatg ctgatgttct ggttgcttga     240
gtctactcct ccaggtaatg atgaacccta cactgagcag atggggcaac tgtggagaga     300
agggggtgaaa ggatcccacc tcactcctga tttcattgca ggaaaaaagt tagcttgaat     360
atggaccaca aggtaagggc atttgtccat gaatggggct c                         401


<210> 35
<211> 401
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 35
catttcttcc tactagactg cccccttgat ccactggcag aaatgatggc accaccttgt        60
cttcaggtgg tgctccttca ttattccaag gatgcagcat ctctatggtg ccaggtatgg       120
gggtaaagcc tttggcgccc tttccgcaat ggcacatcag cagtaaaagt ggtaccaata       180
gcangaacag aaagggcaaa atcatgancg caattgctgc gggtcccaag cccacatagg       240
aatcatgctg ngcttccctg canccgctgc catgcaagac actnacaaac tgngantgta       300
aggacctgct tttcaggaca actaaaaccc tgattgnctg aaatcaggaa ctgaatttca       360
cttctcccaa gctttttctc actttggtgc aacancacac t                          401


<210> 36
<211> 401
<212> DNA
<213> Homo sapien


<400> 36
cctgctagaa tcactgccgc tgtgctttcg tggaaatgac agttccttgt ttttttttgtt       60
tctgtttttg ttttacatta gtcattggac cacagccatt caggaactac cccctgcccc       120
acaaagaaat gaacagttgt agggagaccc agcagcacct ttcctccaca caccttcatt       180
ttgaagttcg ggttttttgtg ttaagttaat ctgtacattc tgtttgccat tgttacttgt       240
actatacatc tgtatatagt gtacggcaaa agagtattaa tccactatct ctagtgcttg       300
actttaaatc agtacagtac ctgtacctgc acggtcaccc gctccgtgtg tcgccctata       360
ttgagggctc aagctttccc ttgttttttg aaagggggttt a                          401


<210> 37
<211> 401
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G


<400> 37
cnnctntgna atggantnnt tgnctaaaan ganttgatga tgatgaanat ccctangang       60
antaagcatg gancntgatc ntttnctnng cactccttta cgacacggaa acangnatca       120
ncatgatggt accaganacc ttatcaccna cgcgcacnga nctgactnat tccaaagagt       180
tgnggttacg gncatccggt cattgctcgt gcccattgct gcagggctga tnctactggt       240
gcttattatg ntggccctga ggatgctcca caatgaatat aagcatgctg catgatcagc       300
ggcaacanat gctctgccgt ttgcactaca tctttcacgg acacnatntc gaanacgggc       360
acnttgcana gttagacttg gaatgcatgg ngccggncan n                          401


<210> 38
<211> 401
<212> DNA
<213> Homo sapien


<400> 38
aattggctca ctctctcaag gcaagcactg tctcaaggca gtctcaaggc agagatgaca       60
cagcaaaaaa cagaggggga gaaaaaagtc tattattggc ttgtgatttta caaaagccaa       120
agtcctttag ataaaaggcc aggagtcgta ccaacataga taccaaatcc aggagaacac       180
agaccagcga taagagggac gcttccccat gacccagacc agcctaaagc ccctgtgggg       240
```

12

```
gcagccagtg gggagctgtc agaccttgga catggtggtc tttgagaatg ggtctgccct        300
tctctccctg accagttggg atagacacct gactggaatc cttgacactg gcaggtgttt        360
ctatgaacag agaggactgt gcctgtcttc ctgaatccca a                           401
```

```
        <210> 39
        <211> 401
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(401)
        <223> n = A,T,C or G

        <400> 39
tctggtangg agcaattcta ttatttggca ttgcatggct gggttgaatt aaaacaggga        60
gtgagaacag gtgagtctag aagtccaact ctgaaaagga ccactgtaca tttgaacaca       120
cggctgtgtt aaagatgctg ctaatgtcag tcactgggtg cactaaagga tctcttattt       180
tatgtaaaac gttgggaatg acaagatana actgatactc tggtaagtta ccctctgaag       240
ctacttcttg tgaaatacta atgacagcat catcctgcca agcgaaagag gcaggcataa       300
gcaaggacaa attaaaaggg ggtaagagcc ttatcatgat gaggagtctt gtttttgacat      .360
cttgggaaaa gctgtccata gtgtgaagtc gtcaatttct c                           401
```

```
        <210> 40
        <211> 401
        <212> DNA
        <213> Homo sapien

        <400> 40
tctggtcacc caactcttgt ggaagagggg aattgagatc gagtactgaa tatctggcag        60
agaggctgga atccttcagc cccagagccc agggaccact ccagtagatg cagagagggg       120
cctgcccagg ggtcagggca gtgggtatca ctggtgacat caagaatatc agggctgggg       180
aggcatcttt gtttcctggt gccctcctca aagttgctga cactttgggg acgggaaggg       240
gtagaagtag ggctgctcct tttggagctg gagggaatag acctggagac agagttgagg       300
cagtcgggct gtccaggttc taagcatcac agcttctgca ctgggctctg aggagattct       360
cagccagagg atcccagcct cctcctccct caaatgtcaa g                           401
```

```
        <210> 41
        <211> 401
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(401)
        <223> n = A,T,C or G

        <400> 41
ctggactaaa aatgtccact atggggtgca ctctacagtt tttgaaatgc taggaggcag        60
aaggggcaga gagtaaaaaa catgacctgg tagaaggaag agaggcaaag gaaactaggt       120
ggggaggatc aattagagag gaggcacctg ggatccacct tcttccttan gtcccctcct       180
ccatcagcaa aggagcactt ctctaatcat gccctcccga agactggctg ggagaaggtt       240
taaaaacaaa aaatccagga gtaagagcct taggtcagtt tgaaattgga gacaaactgt       300
ctggcaaagg gtgcganagg gagcttgtgc tcangagtcc agcccgtcca gcctcggggt       360
gtangtttct gaagtgtgcc attggggcct caccttctct g                           401
```

```
        <210> 42
        <211> 310
```

13

```
        <212> DNA
        <213> Homo sapien

        <400> 42
ggttcgacaa atccccaaaa atggcaaatt aagccctgtg acaaaataag ttattggatc       60
atacagaaat agcccaaatc tggaaatttt gaattaaaat tgtaatcctg taaaacaagt      120
tttggggtga atggatttct ttaataccaa taatattttt aattcccacc acagatggat      180
ttgctgaata tgctaatgct gtgaatgaga aaacaatttt ggggtaggta tacccacaag      240
taatctgatg acaaaataaa ccacagactg atgtcaaatg gacaaaaaac tgaaaatatg      300
ctgtgagaaa                                                             310


        <210> 43
        <211> 401
        <212> DNA
        <213> Homo sapien

        <400> 43
aggtcactta cacttgtgac cagtgtgggg cagagaccta ccagccgatc cagtctccca       60
ctttcatgcc tctgatcatg tgcccaagcc aggagtgcca aaccaaccgc tcaggagggc      120
ggctgtatct gcagacacgg ggctccagat tcatcaaatt ccaggagatg aagatgcaag      180
aacatagtga tcaggtgcct gtgggaaata tccctcgtag tatcacggtg ctggtagaag      240
gagagaacac aaggattgcc cagcctggag accacgtcag cgtcactggt attttcttgc      300
caatcctgcg cactgggttc cgacaggtgg tacagggttt actctcagaa acctacctgg      360
aagcccatcg gattgtgaag atgaacaaga gtgaggatga t                         401


        <210> 44
        <211> 401
        <212> DNA
        <213> Homo sapien

        <400> 44
atccctgtaa gtctattaaa tgtaaataat acatacttta caacttctct tagtcggccc       60
ttggcagatt aaatctttgc aaaaattccat atgtgctatt gaaaaatgaa ataaaacctc      120
agatgtctga attcttattt caaatacagt tatataatta ttttaaatta caatatacaa      180
tttctgttaa atacaactgt taagggattc tgagaacaat tataagatta taataatata      240
tacaaactaa cttctgaaat gacatgggtt gtttccttcc caccctccta ccctctcaaa      300
gagttttttgc atttgctgtt cctggttgca aaaggcaaaa gaaaatctaa aaatagtctg      360
tgtgtgtcca cgacatgctc gctcctttga gaatctcaaa c                         401


        <210> 45
        <211> 401
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(401)
        <223> n = A,T,C or G

        <400> 45
gtgcctgctg cctggcagcc tggccctgcc gctgcctcag gaggcgggag gcatgagtga       60
gctacagtgg gaacaggctc aggactatct caagagattt tatctctatg actcagaaac      120
aaaaaatgcc aacagtttag aagccaaact caaggagatg caaaaaattc tttggcctac      180
ctatactgga atggtaaact cccgcgtcat anaaataatg caanaagccc agatgtggag      240
tgccagatgt tgcagaatac tcactatttc caaatagccc aaaatggact tccaaagtgg      300
tcacctacag gatcgtatca tatactcgag acttaccgca tattacagtg gatcgattag      360
tgtcaaaggc tttaaacatg tggggcaaag agatccccct g                         401
```

14

```
<210> 46
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 46
gtcagaattg tctttctgaa aggaagcact cggaatcctt ccgaactttc caagtccatc         60
catgattcan agatactgcc ttctctctct ctgggatttt atgtgtttct gatagtgaat        120
tgttgatgta tttgctactt tgcttctttt ctctttcaag acttgatcat tttatatgct        180
gnttggagaa aaaaagaact tttggtagca aggaggtttc aagaaatgat tttggatttt        240
ctgctgcgga atttctcggc acctacctgt agtatggggc acttggtttg gttgcagagt        300
aagaaggtgg aagaatgagc tgtacttggt taagcagttg aaacctttt tgagcaggat         360
ctgtaaaagc ataattgaat ttgtttcacc cccgtggatt c                            401


<210> 47
<211> 401
<212> DNA
<213> Homo sapien

<400> 47
ggtctgcagc aatgcacttc aaccatacat actgcttcca ctagctaata ccaaatgcag         60
gttctcagat ccagacaaat ggaggaaaag aacatttatg cttccgtttc agaaagccaa        120
gtcgtagttt tggcccttcc tttctctaaa gtttattccc aaaaacaggt agcattcctg        180
attgggcaga gaagaggata ttttcagccc acatctgctg caggtatgtc attttctccc        240
atcttcactg tgactagtaa agatctcacc acttctcttt ggaatttcca actttgcttg        300
tgattgaatg tcacttcgtg aatttgtatt atgtcagatc acttggcatt gctcttccat        360
atgcatcaag ttgccaggca ctaaacccaa tgttcatgaa c                            401


<210> 48
<211> 430
<212> DNA
<213> Homo sapien

<400> 48
acataacttg taaactttt ctgcttgggg gctgtaacag acagaagagt aaagactaca          60
aggattttct gaagatgctt caatgaaaat catcatttcc tctttagtca tcccaagtct        120
tggtttgaaa aacttgggca tggacttata cagaccttga accaccactg acttatcatt        180
gggtggcaga ccttgaaacc aagctctctg tgttacttct gaaagtgcat caattctgat        240
ttggctaaga acagaagaca aatactggga tcgtgattct gtgttatact ctagccacag        300
catagcagct tctcgaacgg tttcttcctt ttctacattt aaattgtcac tactgagaat        360
atctatcagt aggtcatgtg acagacctgc cccggggccg gcccgctcga tgcttgccga        420
atatcatggt                                                               430


<210> 49
<211> 57
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(57)
<223> n = A,T,C or G
```

15

```
<400> 49
ggtattaaca atatcangca ctcattcttc ccctcttatg aaanggatna attttta              57

       <210> 50
       <211> 327
       <212> DNA
       <213> Homo sapien

       <220>
       <221> misc_feature
       <222> (1)...(327)
       <223> n = A,T,C or G

       <400> 50
gatggnggtn tccacaagan tnaangtncn tattaantan nncttgtaga nccacttnna          60
ttaattgnnn tatgnntgnc cttctggtgg ntgtngaagc ttcatatnnt ntttggacat          120
cattacacgt cttagctctt tnaagnacaa ctttaatgct atatgaattt tgccattttn          180
gctaacactg gtatgctccn ngcatccacc atnccacntg gaattattta ttncnttcat          240
attaatnttt tgtttaccaa atctnacttg acccgaacga aactttctgn gtattttang          300
gccccnccat tcttactttt caagcct                                             327

       <210> 51
       <211> 236
       <212> DNA
       <213> Homo sapien

       <400> 51
cgtctcgaag aagcgctgca ggccgatgat ggactgcacg tctgccttgt cctcagttaa          60
cttgttgaat tgcttgaaca tgcggcccac atcctgggca aactcctgtg gggagctgta          120
gggaggtgac aacttctcct ggaggcgggc acggatcagg gtcagatcca gggtgccacc          180
gggctggtcc agggagaagg tggagtcgta gccagacctg cccgggcggc cgctcg            236

       <210> 52
       <211> 291
       <212> DNA
       <213> Homo sapien

       <220>
       <221> misc_feature
       <222> (1)...(291)
       <223> n = A,T,C or G

       <400> 52
ctcacatcct gggtccggct gtagagctgc accatggtgc tgagcgcccc ctccagctcc          60
ttgtagatgt aaaggacggc gaaggagctg tagtctgtgt ccacgatgcg cacgtccagg          120
tagcccaagg ccgggactct gaagttgtcc ctcggagccc accttcangt actcgggcat          180
ccacctggtt acagccnttc gncctcggna actccatntg gactttacag gccgcccctcc         240
tctgtgggcc tgatggncct tgcaggacat nggaacacgg gagctcnctt t                  291

       <210> 53
       <211> 95
       <212> DNA
       <213> Homo sapien

       <220>
       <221> misc_feature
       <222> (1)...(95)
       <223> n = A,T,C or G
```

16

```
        <400> 53
gtctgtgcag tttctgacac ttgttgttga acatggntaa atacaatggg tatcgctgan      60
cactaagttg tanaanttaa caaatgtgct gnttg                                95

        <210> 54
        <211> 66
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(66)
        <223> n = A,T,C or G

        <400> 54
cctnaatnat ntnaatggta tcaatnnccc tgaangangg gancggngga agccggnttt      60
gtccgg                                                                66

        <210> 55
        <211> 265
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(265)
        <223> n = A,T,C or G

        <400> 55
atctttcttc tcagtgcctt ggccntgttg agtctatctg gtaacactgg agctgactcc      60
ctgggaagag aggccaaatg ttacaatgaa cttaatggat gcaccaagat atatgaccct     120
gtctgtggga ctgatggaaa tacttatccc aatgaatgcc gtgttatgtt tttgaaaatc     180
ggaaacgcca gacttctatc ctcattcaaa aatctgggcc ttnctgaaaa ccagggtttt     240
naaaatccca ttcnggtcnc cggcg                                          265

        <210> 56
        <211> 420
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(420)
        <223> n = A,T,C or G

        <400> 56
gagcggccgc ccgggcaggt cctcgcggtg acctgatggg atttcaaaac cttggttctc      60
agcaaggccc agatttttga atgangatag aagtctggcg tttccgattt tcaaaacata     120
acacgcattc attgggataa gtatttccat cagtcccaca gacngggtca tatatcttgg     180
gtgcatccat taagttcntt tgttaacatt tgggcctctc tttcccangg gaattcagct     240
cccagttgtt taccaanatt naactccacc ggggccaaag gcncttgaaa aaaaaaanaa     300
ttccttgttt accttccttg ggcttnaagt tctggcgtcc aaaagttcaa tttgaaaact     360·
gcaccgcact taccacgtct cttcnagaan cctggggaca cctcggccgc gaccacgcta     420

        <210> 57
        <211> 170
        <212> DNA
```

17

<400> 57
gaagcggagt tgcagcgcct ggtggccgcc gagcagcaga aggcgcagtt tactgcacag   60
gtgcatcact tcatggagtt atgttgggat aaatgtgtgg agaagccagg gaatcgccta   120
gactctcgca ctgaaaattg tctctccaga cctcggccgc gaccacgcta   170

<210> 58
<211> 193
<212> DNA
<213> Homo sapien

<400> 58
attttcagtg cgagagtcta ggcgattccc tggcttctcc acacatttat cccaacataa   60
ctccatgaag tgatgcacct gtgcagtaaa ctgcgccttc tgctgctcgg cggccaccag   120
gcgctgcaac tccgcttcat cggcttcgcc cagctccgcc attgttcgcc acctgcccgg   180
gcggccgctc gaa   193

<210> 59
<211> 229
<212> DNA
<213> Homo sapien

<400> 59
cgcaactctc gagcatttat atacaatagc aaatcatcca gtgtgttgta cagtctataa   60
tactccaaca gtctcccatc tgtattcaat ggcgccaccc aatacagtcc tttgtttgga   120
tgctggggag agtaatccct accccaagca ccatatagat aagaaaaccc tctccagttg   180
agctgaacca cagacggttt gctgatacct gcccgggcgg ccgctcgaa   229

<210> 60
<211> 340
<212> DNA
<213> Homo sapien

<400> 60
tcgagcggcc gcccgggcag gtcctctaaa gatcaaaaca cccctgtcgt ccaccctcct   60
cccactccag ggaagctgtg gtcatggtgg tgtggtgaac atcagcaaac cgtctgtggt   120
tcagctcaac tggagagggt tttcttatct atatggtgct tggggtaggg attactctcc   180
ccagcatcca aacaaaggac tgtattgggt ggcgccattg aatacagatg ggaaactgtt   240
ggagtattat aaactggtac aacacactgg atgatttgct attgtatata aatgctcgag   300
aattgcggat cacctatgga cctcggccgc gaccacgctg   340

<210> 61
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 61
tttttgtgac ggacgnttgg agtacatgtc ccaggatcac atccagcagc tagagtggct   60
gggacaagct ggcggnggcc aagcactgtt gaaacnatag gggtctgggn gnactcgggt   120
tnaagtggtt ggtccgantn ttnataacct tgtcngaacc nancatctcg gttgncang   179

<210> 62

18

```
        <211> 78
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(78)
        <223> n = A,T,C or G

        <400> 62
agggcgttcg taacgggaat gccgaagcgt gggaaaaagg gagcggtggc nggaagacgg      60
ggatgagctt angacaga                                                    78

        <210> 63
        <211> 410
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(410)
        <223> n = A,T,C or G

        <400> 63
cccagttact tggggaggct gaggcaggga gaatcctttg aacccggngg gtgggaggtt      60
gcagtgagcc cgagatagca ccattgcact tccancatgg ggtggacaga gtgagactct     120
atctcaaaaa aaaagaaaag aaaaggaaag agattagatt aagattaagt acctacttcc     180
tntcccattt caagtcctga aaatagagga tcagaaatgt tgaggaattc tttaggatag     240
aaagggagat gggattttac ttatggggaa agaccgcaaa taaagactgn aacttaacca     300
cattccccaa gtgnaaggtg ttacccaaga agtaggaacc cttttggctn ttaccttacc     360
ttccngaaaa aaacttattn cttaaaatgg aaacccttaa agcccgggca                410

        <210> 64
        <211> 199
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(199)
        <223> n = A,T,C or G

        <400> 64
cttgttctca aaaaggtcaa agggagcccg acgaggaata aatagcaatg ccctgaattc      60
caactgacct tctacagaaa agtgcttgac tgccaagtgg tcttcccagt cattagtgag     120
gctcttgtag aattctccat actcctcttg ggngangnca tnagggtttn nggcccaaat     180
aggntgggcc tngttaagt                                                  199

        <210> 65
        <211> 125
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(125)
        <223> n = A,T,C or G
```

19

<400> 65

```
agcggtacag ttctgtcctg gcatcatcat tcattgtagt atggtcaata ggtgccatga     60
aactcagtag cttgctaagg acatgaaacc gaagtttcct gcctttgctg gcctngtngn    120
gggta                                                                 125
```

<210> 66
<211> 204
<212> DNA
<213> Homo sapien

<400> 66

```
attcagaatt ctggcatcgg tatttctata aagtccatca gttagagcag gagcaggccc     60
ggagggacgc cctgaagcag cgggcggaac agagcatctc tgaagagccc ggctgggagg    120
aggaggaaga ggagctcatg ggcatttcac ccatatctcc aaaagaggca aaggttcctg    180
tggacctcgg ccgcgaccac gcta                                           204
```

<210> 67
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 67

```
tcagggcctc caggcagcca gttttgcagg anattcagca cctagngtct tcctgcctna     60
cgctcccaag aacctgctcc tgcaggggga acatcagaac tcgtccttga tgtcaaaatg    120
gggctggtct tnaggcttga agtccaggtt agggctgcca tcctcattga gaattctccg    180
ggcagtgtan ccgacgatgg ggtatttggc tttgtacact ttggtgaaaa cctnatccag    240
ggcctccagt tccttggccg tganaccgt antgtcatgg gtgaggtctg caggatccaa    300
ggacatcttg gctacccctc tagtggagtc cttccccgtc aaggcattgt aaggggctcc    360
tcgtccataa aactcctttt cgg                                            383
```

<210> 68
<211> 99
<212> DNA
<213> Homo sapien

<400> 68

```
tcacatctcc tttttttttt aactttttca aatttttgtg ttaaatagaa ggctaaaggg     60
ttagatttaa gtttctgcta cattgaccct atttaccta                            99
```

<210> 69
<211> 37
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(37)
<223> n = A,T,C or G

<400> 69

```
gagaaggacn tacggncctg ntantanang aatctcc                              37
```

<210> 70

```
<211> 222
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(222)
<223> n = A,T,C or G

<400> 70
gtgggtcatt tttgctgtca ccagcaacgt tgccacgacg aacatccttg acagacacat      60
tcttgacatt gaagcccaca ttgtccccag gaagagcttc actcaaagct tcatggcgca     120
tttcgacaga ttttacttcc gttgtaacgt tgactggagc aaaggtgacc accataccgg     180
gtttgagaac acccantcac ctgccccggg cggccgctcg aa                        222


<210> 71
<211> 428
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(428)
<223> n = A,T,C or G

<400> 71
caggagtatt ttgtagaaaa gccagaagag cattagtaga tgtatggaaa tatacggtag      60
ggcacacgct gacagtactt ttcccaagcc acgccgtatt tcttcttaca gtggtactcg     120
tcacgagctt ctcggtggac aagcaacatg gtgaaataaa ttatgtagaa ataaggcaga     180
atgtggttaa aaccacatgg gagggaccac gccaaggcca tgatgagatc acccaagtaa     240
ttggggtggc gaacaaagcc ccaccatcca gaaactagaa naatttttcc cgttgaaata     300
tgaatggntt ttaaatgtgc aagctttgga tcactgggaa ttttcccgaa tgccttttc      360
tganaattgc accttnggaa gantccttac cccaagnttc agaccattat ttnaaaagcn     420
ttggaact                                                             428


<210> 72
<211> 264
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G

<400> 72
gaataaagag cttactggaa tccagcaggg ttttctgccc aaggatttgc aagctgaagc      60
tctctgcaaa cttgatagga gagtaaaaag ccacaataga gcagtttatg aagatcttgg     120
aggagattga cacacttgat cctgccagaa aatttcaaag acagtagatt gaaaaggaaa     180
ggctttggta aaaaaaggtt caggcattcc tagccgnantg tgacacagtg gagcanaaca     240
tctgcangag actgancggc tgca                                           264


<210> 73
<211> 442
<212> DNA
<213> Homo sapien

<220>
```

21

```
<221> misc_feature
<222> (1)...(442)
<223> n = A,T,C or G

<400> 73
ggcgaatccg cgggtatca gagccatcag aaccgccacc atgacggtgg gcaagagcag    60
caagatgctg cagcatattg attacaggat gaggtgcatc ctgcaggacg gccggatctt   120
cattggcacc ttcaaggctt ttgacaagca catgaatttg atcctctgtg actgtgatga   180
gttcagaaag atcaagccaa agaacttcaa acaagcagaa agggaagaga agcgagtcct   240
cggtctggng ctgctgccaa gggagaatct ggtctcaatg acngtagaag gaccttcttc   300
caaagatact ggnattgctc gagttccact tgctggaact tcccggggcc caaggatcgc   360
aaggcttctg gcaaaagaaa tccanacttn ggccgggacc acctaancca attcacacac   420
tggcggccgt actagtggat cc                                           442


<210> 74
<211> 337
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

<400> 74
ggtagcagcg tctccagagc ctgatctggg gtcccagata cccaggcagc agcagccctg    60
gaggtaaagg gcaagctccc caatgtgagg ggagacccca ttcctggtca gccaggcttt   120
cagaggagat agcaggtcga gggagccaac gaagaagaga ctgccancag gggaaggact   180
gtcccgccaa ggacagaact gattcagggg ggtcaatgct cctctagaga agagccacac   240
agaactgggg ggtccaggaa ccatgaanct tggctgtggt ctaaggagcc aggaatctgg   300
acagtgttct gggtcatacc aggattctgg aattgta                           337


<210> 75
<211> 588
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(588)
<223> n = A,T,C or G

<400> 75
catgatgagt tctgagctac ggaggaaccc tcatttcctc aaaagtaatt tatttttaca    60
gcttctggtt tcacatgaaa ttgtttgcgc tactgagact gttactacaa actttttaag   120
acatgaaaag gcgtaatgaa aaccatcccg tccccattcc tcctcctctc tgagggactg   180
gagggaagcc gtgcttctga ggaacaactc taattagtac acttgtgttt gtagatttac   240
actttgtatt atgtattaac atggcgtgtt tattttgta tttttctctg gttgggagta   300
tgatatgaag gatcaagatc ctcaactcac acatgtagac aaacattagc tctttactct   360
ttctcaaccc cttttatgat tttaataatt ctcacttaac taattttgta agcctgagat   420
caataagaaa tgttcaggag agangaaaga aaaaaaatat atgttcccca tttatattta   480
gagagagacc cttantcttg cctgcaaaaa gtccaccttt catagtagta ngggccacat   540
attacattca gttgctatag gncagcactg aactgcatta cctgggca               588


<210> 76
<211> 196
<212> DNA
<213> Homo sapien
```

22

```
     <400> 76
gcggtatcac agcctggccc ccatgtacta tcgggggggcc caggctgcca tcgtggtcta        60
tgacatcacc aacacagata catttgcacg ggccaagaac tgggtgaagg agctacagag       120
gcaggccagc cccaacatcg tcattgcact cgcgggtaac aaggcagacc tggacctgcc       180
cgggcggccg ctcgaa                                                       196

     <210> 77
     <211> 458
     <212> DNA
     <213> Homo sapien

     <220>
     <221> misc_feature
     <222> (1)...(458)
     <223> n = A,T,C or G

     <400> 77
agtagagatg gggtttcact gtgttaacca ggatggtctt gatctcctgg cctcgtgatc        60
tgcccgcctc ggcctcccaa agtgttggga ttacaggcgt gaaccaccgc acccggccag       120
aaatgttagt ttttccctat tctctctcct ttttcctatt atatacttgg tcaaccagac       180
agccatccta ccccanaatg gtaatgcctc ttcattcctc atatgaggga ataaaagaga       240
aaaaagcttt tggaaaacat ccacttatct aatcatccca aatatgtaat caaaagtata       300
caactcatgt gaagaataca ctggtaaaat gttantatag gccaaggtat cttgaattcc       360
tatatagaaa gctggtaaat gcccttttgg ctggaaccgc catcttccnn taattcnccc       420
aaaatgacca aacacaaagg gnaagangan aagccccc                              458

     <210> 78
     <211> 464
     <212> DNA
     <213> Homo sapien

     <220>
     <221> misc_feature
     <222> (1)...(464)
     <223> n = A,T,C or G

     <400> 78
tccgcaaatt tcctgccggc aaggtcccag catttgaggg tgatgatgga ttctgtgtgt        60
ttgagagcaa cgccattgcc tactatgtga gcaatgagga gctgcgggga agtactccag       120
aggcagcagc ccaggtggtg cagtgggtga gctttgctga ttccgatata gtgcccccag       180
ccagtacctg ggtgttcccc accttgggca tcatgcacca caacaaacag gccactgaga       240
atgcaaagga ggaagtgagg cgaattctgg ggctgctgga tgcttacttg aagacgagga       300
cttttctggt gggcgaacga gtgacattgg ctgacatcac agttgtctgc accctgttgt       360
ggctctataa gcaggntcta gaaccttctt ttcgcangac cttcggccgg accacgctta       420
acccaaattc cacacacttg cnggccgtac taanggaatc ccac                       464

     <210> 79
     <211> 380
     <212> DNA
     <213> Homo sapien

     <220>
     <221> misc_feature
     <222> (1)...(380)
     <223> n = A,T,C or G

     <400> 79
```

23

```
ctgtatgacc agttttttcca tctccttcac ttctaccttg atcagctcga agtccagttc      60
agtgtaagaa atggtatcct tctccatgat gtcaattcgg acagttaggt ttaacagttt      120
cttttcatac acactaatta attggacata ttccctcact ttanaaagtt cttctctcaaa     180
cttctganaa aagaacatga actgtgaatt ccaagcgttc ccactctgtc cacgggaaaa      240
ggtggtgtct ggcagggaaa cagaacactg gcaggtccac ggtcatccac ggagccggtg      300
aaattgggaa aacaactggg acacagaacc tccgctgcct aagctgcggn tgggagcttg      360
gaacccgacc tggaactgga                                                  380
```

```
            <210> 80
            <211> 360
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(360)
            <223> n = A,T,C or G

            <400> 80
tcgagcggcc gcccgggcag gtcctcagag agctgtttgt tncgcttctt caaaaactcc      60
tattctccac ttctgctaaa ggactggatg acatcaattg tgatagcaat atttgtgggt      120
gttctgtcan ncancatcgc actcctgaac aaagtagatg ttggattgga tcagtctctt      180
tccacccaga tgactcctan atggtggatn atttcaaatc catcantcag tacctgcatg      240
cgnggtccgc ctgtgtnctt tgtcctgcag gangggcnct actacacttc ttccnagggg     300
canaacatgg tgtgcngcgg ccatgggctg gcaacantga ttcnctgctg cacccanatn     360
```

```
            <210> 81
            <211> 440
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(440)
            <223> n = A,T,C or G

            <400> 81
acgtggtccg gcgagtctga cctgcagata tgaactcctt gggaaaccta cattctgcct      60
cagacatact gggggcaaat ggctttaaaa gtctggctca gggagccaag attacagaaa     120
nccgttgagt cnccatacat ggacactgac aaaggaactg aagatatcca aacaagccct     180
cctggtcccg ngcctgcata aagatcggga ncggaacggt accngacgtc tgtggtcagg      240
ggttgtggaa aattggaaaa aaccagtcct gcccacattg acaggaagc ctcaacggaa      300
attgaacaga tngtcttatc accagtctcc cctcctggat cntgtctcgg ctcnggggan     360
tcagtgatca gtcctttcag gtggaagaag caaagaagat caacaanaag cngatcctct     420
cacctgntac cagcatatgg                                                  440
```

```
            <210> 82
            <211> 264
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(264)
            <223> n = A,T,C or G

            <400> 82
agcgtggtcg cggccgangt cctgacattc ctgccttctt atattaatta tacnaataaa      60
```

24

```
acaaaatagt gttgaagtgt tggagcggcg aaaatttttg gggggtggta tggacagaga      120
atgggcgatn ttctcanggc tgcttcaagt gggattgggg cngcgtggga tcatncagtg      180
gganagattn cnctgaccgg antctnttgg tanggatnat cttgtgggga tgtgcaagag      240
ncattcgtct cctgaatgan tggt                                             264
```

```
        <210> 83
        <211> 410
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(410)
        <223> n = A,T,C or G

        <400> 83
ancgtggtcg cggccgangt ccacagttgt gggagagcca gccattgtgg gggcagctcc       60
acaggtaaga ctcgtgtcct gagcagcgca catcatccag gacaatgggt cctgagccct      120
gaccaaaccg ggcatttcct ggggctgaca tggcccagcc acagcccant tgcctgcaga      180
cgaaattggc atcattggtg tcccagtant catcacacac ggtgccccag gaacctccgg      240
tatangaact ccactcggcc tcnanacctg tcgcctccat tccncagcct caggggggcaa      300
actgggattc agatccttct gtgggtacag gtggtgatat cctgacaggc caactttctg      360
gcctgagtgt tgactgangc tgggcagacc tgcccgggcg ccgctcgaa                  410
```

```
        <210> 84
        <211> 320
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(320)
        <223> n = A,T,C or G

        <400> 84
tcgaacggcc gcccgggcag gtctgcccca ggtgtatcca tttgccgccg atctctatca       60
naaggagctg gctaccctgc nncgacgaan tcctgaanat aatctcaccc nccagatct       120
ctctgtcgca atggagatgt cgtcatcggt ggncctgatc acagggcatt ggactcagag      180
anangtnanc acagtgtnga agcgattgan nnagttcagt tgctggtctt acccgatntt      240
ggaaggaagg aaaacgtgtt angacgtatc tcgatgnant tgaccaaanc tgaangctnc      300
aggggggcatc gcaaaganan                                                 320
```

```
        <210> 85
        <211> 218
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(218)
        <223> n = A,T,C or G

        <400> 85
tcgagcggcc gcccgggcag gtctgctgcc cgtgctggtg ccattgcccc atgtgaagtc       60
actgtgccag cccagaacac tggtctcggg cccgagaaga ctcctttctc caggctntan      120
gtatcaccac taaaatctcc aggggcacca tnganatcct gggtgtccgc aatgttgcca      180
atgtctgtcc gcnnattggc tacccaactg ttgcatca                              218
```

25

```
<210> 86
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 86
tcgacttctt gtgaaggttt tgganaaata tgtatcagtt cgttttattt gggtattcaa      60
taatatcctt ggtgataatg ctgactccat ggcttctgac cccaaaaatt gaccctgctg     120
ccactggttg tagccctgag attgattttt gtagccacga ttgtttcctc gtcctctgaa     180
gtnctggttg tanttccctc tgtngggcat tcccctctgt tgtanttccc tctgtttgan     240
taactaccac ggccaggaaa aacaggggca cgaaggtatg gat                       283

<210> 87
<211> 179
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(179)
<223> n = A,T,C or G

<400> 87
agcgtggtcc cggccgatgt ctttctgtgt aagtgcataa cactccacat acttgacatc      60
cttcangtca cgggccagct nttcagcant ctctggagtg ataggctact gtntgttctn     120
ggcaagtgtc tcaanaatac aggggtcntc tctgagatga ntttcagtcc cgaaccctc      179

<210> 88
<211> 512
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(512)
<223> n = A,T,C or G

<400> 88
tcgagcggcc gcccgggcag gtcctancan agaatcacca aatttatgga gagttaacag      60
gggtttaaca ggaangaagt gcctttagta agttctcaag ccagangctg gaggcagcag     120
ctaaatcaga ggacaggatc ctcagtgaaa gtgagccatt cggggtggca tgtcactcca     180
ggaataagca caacttanaa acaaatgatt tcgtangata gcacagtgac attggtgcac     240
ttgtgaacct gaggccactg tgtcaaactg tgcactggtt gtgaataggg aganccaaaa     300
attatgtcct actgggtaat gagctttcaa tgggctcgat cctctcacnc tgaaagctct     360
gtagagcagc tcagaaccac aaccactccc aacattgacc cttctggggg tactgtctgt     420
ggcacccaca ggaaggagct ggagatcccc attaggactg tccacccaca cttgaagcca     480
caaaactgca cctcggccgc gaccaccgct ta                                   512

<210> 89
<211> 358
<212> DNA
<213> Homo sapien
```

26

```
        <220>
        <221> misc_feature
        <222> (1)...(358)
        <223> n = A,T,C or G

        <400> 89
tcgagcgggc cgcccgggca ggtctgccag tccccatccc agacattctt tgcatctaag      60
ctgangtctg aactgagtgg ggtgggctgg tgtttccatc ctcacaactc cagtgagccg     120
ggtgtggccg tggcctgcgt ctctctggcg gttagtgatg ttggcatcat ccaccttttt     180
caaaacaaaa gcactggact gaagaanaat cccnccctgt ntccacccag tccatggttt     240
ttaataaaag ggttatnnaa gttgancaag ncatcaccac acacaancct aagaacnttt     300
ttcatcnntc cccaaaacaa acccncaccc tgggaactcc gggcgcgaac cacgccta       358

        <210> 90
        <211> 250
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(250)
        <223> n = A,T,C or G

        <400> 90
cgagcggccg cccgggcagg tctggatggg gagacggact ggaactgcgg cttcccgtgg      60
cctgcacgca caaggctccc cacggccgcc gaccttcttc agattcgatc gtatgtgtac     120
gcacnaagag ccaaatattg acattcacaa cttcgtggga atnttacccc anaagactgc     180
gacccccga  tcaggcgana gcctgagcat agaagaacac cgctgtgggc ttggcactgt     240
gggncccatc                                                           250

        <210> 91
        <211> 133
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(133)
        <223> n = A,T,C or G

        <400> 91
tcgagcggcc gnccgggcag gtcccgggtg gttgtttgcc gaaatgggca agttcntnaa      60
ncctgggaag gtggtgcntg tnctggctgg acgctactcc ggacgcnaag ctgtcntcgt     120
gangancatt gat                                                       133

        <210> 92
        <211> 232
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(232)
        <223> n = A,T,C or G

        <400> 92
agcgtggtcg cggccgangt ctgtcacttt gcggggtag cggtcaattc cagccaccag      60
agcatggctg taggggcgat ctgaggtgcc atcatcaatg ttcttcacga tgacaagctt    120
```

27

```
tgcgtccgga gtagcgtcca gccaggacaa gcaccacctt cccacgtntt cangaactng      180
cccatttcgg cataaccacc cgggacctgc ccgggcggnc gctcgaaaag cc               232
```

        <210> 93
        <211> 480
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(480)
        <223> n = A,T,C or G

        <400> 93
```
agcgtgggtc gcggccgang tctgtangct caccggccag agaagaccac tgtgagcatt       60
ttgccgtata tcctgccctg ccatttgttc acttttaaa ctaaaatagg aacatccgac       120
acacaccgtt tgcatcgtct tctcccttga tattttaagc attttcccat gtcgtgagtt      180
tctcagaaac atgtttttaa caattgtact atttagtcat ngtccattta ctataattta      240
tctgaccatt tccctactgt taaaatactt aagacggttt ctgatttttc cactatttaa      300
ataatgctgt gatgaatatc tttaaaatct tctgatttct tactttttc ccccttagat        360
gcctggaagt ggtattttga ggtgaaagag tttgttcatt ttgaanatat ttctgtctct      420
ctctcgacct gatgtgtana cgctcacttc cagttagcag aaccacctta gtttgtgtct      480
```

        <210> 94
        <211> 472
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(472)
        <223> n = A,T,C or G

        <400> 94
```
tcgagcggnc gcccgggcag ggtctgatgt cantcacaac ttgaagggat gccaatgatg       60
taccaatccn atgtgaaatc tctcctctta tctcctatgc tgganaaggg attacaaagt      120
tatgtggcng ataannaatt ccatgcacct ctantcatcg atgagaatgg agttcatgan      180
ctggtgaacn atggtatctg aacccgatac cangttttgt ttgccacgat angantagct      240
tttatttttg atagaccaac tgtgaaccta ccacacgtct tggacnactg anntctaact      300
atccncaggg ttttattttg cttgttgaac tcttncagct nttgcaaact tcccaagatc      360
canatgactg antttcagat agcattttta tgattcccan ctcattgaag gtcttatnta      420
tntcnttttt tccaagccaa ggagaccatt ggacctcggc cgcgaccacc tn             472
```

        <210> 95
        <211> 309
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(309)
        <223> n = A,T,C or G

        <400> 95
```
tcgagcggcc gcccgggcag agtgtcgagc cagcgtcgcc gcgatggtgt tgttggagag       60
cgagcagttc ctgacggaac tgaccagact tttccanaag tgccggacgt cgggcancgt      120
ctatatcacc ttgaagaant atgacggtcg aaccaaaccc attccaaaga aangtactgt      180
gganggcttt gancccgcag acaacnagtg tctgttaaga actaccgatn ggaaanaana      240
```

28

```
anatcagcac tgtgggtgag ctccnaggga agttaataan tttcggatgg gcttattcna    300
acctcctta                                                            309


        <210> 96
        <211> 371
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(371)
        <223> n = A,T,C or G

        <400> 96
tcgagcggcc gcccgggcag gtccaccact cacctactcc ccgtctctat agatttgcct    60
gttctgggca gttctcagca atggaatcct actgtgtatc tttttgtgac tggttctttta    120
actcagcatc acattttcaa ggttcatcca tgctgcagcc tggctccgta ctggtgacag    180
tacttcattt ctctctccct tttgttcaga ccaaggtctc cctctgtccc caaggctaaa    240
gtgcagttgg tgtgatcatg gctcactgca gcctcaaact cctggactca aacagtcctc    300
ccatctcagc ctcccaaagt gctgatntta taagttgcaa gccctgcacc cagcctgtat    360
ctccagtttg t                                                         371


        <210> 97
        <211> 430
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(430)
        <223> n = A,T,C or G

        <400> 97
tcgancggcc gcccgggcag gtttnttttn tttntttttt nnnngntagt atttaaagan    60
atttattaaa tcatcttatc accaaaatgg aaacatnttc caactagaaa catgcnacca    120
tcatcttccc cagtccagtc ncaangtcca atattttnct tgcctctgca gataaaaagt    180
tcnnattttt atacccactc ttactccccc ccaaaatttt aattcngtcc tnccctaaaa    240
ttncnccggg taacaantta ccaaaatggc naaccaatta ttttaaanaa aagttgcncn    300
ttnaaaangg aaactttntg gcaanttanc ctcttttccc ttcccacccc ccantttaag    360
gggaaaacaa tggcactttg ctcttgcttn aacccaaaat tgtcttccaa aaactattaa    420
aaatgttnaa                                                           430


        <210> 98
        <211> 307
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(307)
        <223> n = A,T,C or G

        <400> 98
tcnaacggcc gcccnggcnn gtctngcngc acctgtgcct canccgtcga tacctggtcg    60
attgggacan ggaanacaat ntggtttttca gggaggccac anatttggag aaacggatga    120
attctccttt attccgaant cagctccttg gtctccgtag anggtgatct tgaaattctc    180
ctgttttgaa aactttcttg aanaaacctt acctgctggt tgtatttggt ctcccactcg    240
gacaagtact cgttatccnn ggtactctta atgtgcccac gtnaactccc cgggntggca    300
```

```
actggaa                                                                   307

        <210> 99
        <211> 207
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(207)
        <223> n = A,T,C or G

        <400> 99
gtccnggacc gatgttgcna aganntttct tggtccanta ggttcnaaaa aatgataanc      60
naggtntanc acgtgaagat ntntatanag tcttantnaa aacncntaga tctgnatgac    120
gataantcga anacnggggg aggggntgag gngaggtggn gtganggaag anntgttgat   180
aaaagannna gntgataaga anngagc                                         207

        <210> 100
        <211> 200
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(200)
        <223> n = A,T,C or G

        <400> 100
acntnnacta gaantaacag ncnttctang aacactacca tctgtnttca catgaaatgc     60
cacacacata naaactccaa catcaatttc attgcacaga ctgactgtaa ttaattttgt    120
cacaggaatc tatggactga atctaatgcn nccccaaatg ttgttngttt gcaatntcaa    180
acatnnttat tccancagat                                                 200

        <210> 101
        <211> 51
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(51)
        <223> n = A,T,C or G

        <400> 101
tcgagcggcc gcccgggcag gtctgaccag tgganaaatg cccagttatt g              51

        <210> 102
        <211> 385
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(385)
        <223> n = A,T,C or G

        <400> 102
```

```
aacgtggtcg cggccgaagt ccatggtgct gggattaatc cactgtgacn gtgactctga    60
gttgagttgt ttttcaatct tctccaagcc tgtggactca tcctccacat ccttgggtag   120
taggatgaac atgctgaaga tgctnatttt gaaaaggaac tctatgaatc ttacaattga   180
atactgtcaa tgtttcccca tnacagaacg tggnccccca aggttccatc atctgcactg   240
ggtttgggtg ttctgtcttg gttgactctt gaaaagggac atttcttttt gttttcttga   300
attcanggaa attttcttca tccactttgc ccacaaaagt taggcagcat ttaaccccca   360
anggattttg ggtctgggtc cttcc                                         385
```

```
    <210> 103
    <211> 189
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(189)
    <223> n = A,T,C or G

    <400> 103
agcgtggtcg cggccgaagt ctgcagcctg ggactgaccg ggaagctctg attatttacc    60
caccacaggt angttgtgtt ctgaatctca agttcacagg ttaaggctac agcatcctca   120
tcctccacgg ggttggantt gttgctggtg atgaanggtt tggggtggct ctgcataact   180
gttgatctc                                                          189
```

```
    <210> 104
    <211> 181
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(181)
    <223> n = A,T,C or G

    <400> 104
tcgagcggcc gcccgggcag gtccaggtct ccaccaangc accaccgtgg gaagctggta    60
attgatgccc accttgaagc cnntggggca ccatccncca actggatgct gcgcttggtt   120
ttgatggtgg caatggcaca ttgactcttt tgggaaccac ttcaccacgg tacaacaggc   180
a                                                                   181
```

```
    <210> 105
    <211> 327
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(327)
    <223> n = A,T,C or G

    <400> 105
tcgagcggcc gcccgggcag gtcttctgtg gagtctgcgt gggcatcgtg ggcagtgggg    60
ctgccctggc cgatgctcan aaccccagcc tctttgtaaa gattctcatc gtgganatct   120
ttggcagcgc cattggcctc tttggggtca tcgtcgcaat tcttcanacc tccanaatga   180
anatgggtga ctanataata tgtgtgtggg tn gggccgtgcc tcacttttat ttattgctgg   240
ttttcctggg acagaactcg ggcgcgaaca cgcttanccg aattccaaca cactggcggg   300
cgttactagt ggatccgagc tcggtac                                      327
```

31

```
<210> 106
<211> 268
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 106
agcgtggtcg cggccgangt ctggcgtgtg ccacatcggt cccacctcgc tttacaaaac    60
agtcctgaac ttnatctaat aaaattattg tacacnacat ttacattaga aaaaganagc   120
tgggtgtang aaaccgggcc tggtgttccc tttaagcgaa ngtggctcca cagttggggc   180
atcgtcgctt cctcnaagca aaaacgccaa tgaaccccna aggggaaaaa aggaatgaag   240
gaactgnccn gggangnccg ctccgaaa                                       268

<210> 107
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 107
tcgagcggcc gcccgggcag gtggccaggc catgttatgg gatctcaacg aaggcaaaca    60
cctttacacn ctagatggtg gggacatcat caacgccctg tgcttcagcc ctaaccgcta   120
ctggctgtgt gctgccgcag gccccagcat caagatctgg gatttanagg gaaagatcnt   180
tgtnnatgaa ctgaancnta aattatcagt tccannacca ngcaaaaacc acccngtgca   240
ctccctggcc tggtctgctg atgggacctc gggcgcgaac acgctnancc caattccanc   300
acactgggcg gncgttacta ntggatccga actcnggtac caancttggc gtt           353

<210> 108
<211> 360
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(360)
<223> n = A,T,C or G

<400> 108
agcgtggtcg cggccgaagt cctggcctca catgaccctg ctccagcaac ttgaacagga    60
naagcagcag ctacatcctt aaggtccgga aagttagatg aagatttgga tcctgcattg   120
ncctgcctcc cacctatctc tcccnaatta taaacagcct ccttgggaag cagcagaatt   180
taaaaactct cccnctgccc tnttgaacta cacaccnacc gggaaaacct ttttcanaat   240
ggcacaaaaa tncnaggaa tgcatttcca tgaangaana aactgggtta cccaaaatta   300
ttgggttggg gaaatccngg ggggtttttn aaaaagggc aanccnccaa anaaaaaaac   360

<210> 109
<211> 101
<212> DNA
<213> Homo sapien
```

32

```
      <220>
      <221> misc_feature
      <222> (1)...(101)
      <223> n = A,T,C or G

      <400> 109
atcgtggtcn cggccgaagt cctgtgtcct ggatgggccg tgtgcancga atccgttggc       60
gactcctaac taccaanaaa angactctcg gaagaaattt c                          101


      <210> 110
      <211> 300
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(300)
      <223> n = A,T,C or G


      <400> 110
ccanggaaac ccagagtcac atgagatagg gtggctttcg ggacaggggg tcagangaat       60
ggtacatgga tctcagcccc tgatggacac ggaacaggtg tggtcagaac tcccangatt      120
ctgcatccan gatccagtct ctatagaagt tatggatcat ccttcatttt cattcccccc      180
ttcatgaaaa aacttctgaa caagcctttt ttctcacttt ggggccctgt ttggcncaag      240
gtnttnantt ggggaaaaaa aaacaaatcc nttccnttan ccctccgtgg ggaatgacct      300


      <210> 111
      <211> 366
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(366)
      <223> n = A,T,C or G

      <400> 111
cgagcggccg cccgggcagg tccttgtgtt gccatctgtt ancattgatt tctggaatgg       60
aacanctttc tcaaagtttg gtcttgctan tcatgaagtc atgtcagtgt cttaagtcac      120
tgctgctcac ttccttaccc agggaatata ctgcataagt ttctgaacac ctgttttcan      180
tattcactgt tcctctcctg cccaaaattg gaagggacct catttaaaaa tcaaatttga      240
atcctgaaan aaaaacngga aatntttctc ttggaatttg gaatagaatt attcanttga      300
ataacatgtt ttttcccctt gccttgctct tcncaanaac atctggacct cggccgcgac      360
acctta                                                                366


      <210> 112
      <211> 405
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(405)
      <223> n = A,T,C or G

      <400> 112
ctgactncta aacttctaat tcnatcaana taactactct ccttccgtct tncagagtgt       60
tcacaataaa tctgtgaatc tggcatacac agttgctgga aaattgttct tcctccacna      120
```

```
aaaggtcaat tgttcnccnc atgaaanaag ataaattgtt catccatcac tnctgaacca        180
tccaaaacgc cggcggaatt attnccccgt tattatgggg aacggaattt tnaataaatt        240
tgggaangaa tggggctttt attgtttttgt tttcccccctt tcttggcatt gattgggccg       300
caatgggccc cctcgctcan aanntgcccc ggggccggcc gctccaaaac cgaaattccc        360
anccacactt ggcgggccgt tactanttgg atccgaactc ggtta                        405
```

```
                <210> 113
                <211> 401
                <212> DNA
                <213> Homo sapien


                <400> 113
ggatagaaga gtatatgggt ttggcaccac ggggtggata ggcaaaacat ttggttgata         60
aggcgcagat tctgaactaa cttgtaaggc ttgtctggtt ttaggacagg taaaatgggg        120
gaatggtaag gagagtttat aggttttagg agcccatgct gtagcaggca agtgataaca        180
ggctttaatc ctttcaaagc atgctgtggg atgagatatt ggcatttgag cggggtaagg        240
gtgattaggt tttaatgaga tggtaagggg tgcatgatcc ggtccgccaa ggaagggaag        300
tagaggtatc ttatacttgt ggggttaagg tggggggggat ataagaggga ggacgccaaa       360
ggaggctttg gattaggaat aaggggcggc aatgagatgc a                            401
```

```
                <210> 114
                <211> 401
                <212> DNA
                <213> Homo sapien


                <220>
                <221> misc_feature
                <222> (1)...(401)
                <223> n = A,T,C or G


                <400> 114
angtccacag gangcangag gccaggctcc gtcccancca gtccatgatg ttgaagagga         60
ggaagcagca catggggttg aagaactgac tccacttccc aggactggtg gagctggtca        120
ccatggctgt ggtggcgggg aagacggaca gggtgacttc tggaagacag tgaagactga        180
aggtttttcct ggcttctggg gctcatctgg ctctgattcc ggctccttct ccaggtcaag       240
atccagggtt cagagctact ttcttggggg actactnggg aatcccgttc tcatctgggg        300
gtngagggggg gacggggnaa gggncatgct tgtgacccag gtttcccacc tcggcccgcg       360
accacgctaa ggcccgaatt ncagcacact tggcggcccg t                            401
```

```
                <210> 115
                <211> 401
                <212> DNA
                <213> Homo sapien


                <400> 115
atccctgtaa gtctattaaa tgtaaataat acatacttta caacttctct tagtcggccc         60
ttggcagatt aaatctttgc aaaattccat atgtgctatt gaaaaatgaa ataaaacctc        120
agatgtctga attcttattt caaatacagt tatataatta ttttaaatta caatatacaa        180
tttctgttaa atacaactgt taagggattc tgagaacaat tataagatta taataatata       240
tacaaactaa cttctgaaat gacatggggtt gtttccttcc caccctccta ccctctcaaa       300
gagtttttgc atttgctgtt cctggttgca aaaggcaaaa gaaaatctaa aaatagtctg        360
tgtgtgtcca cgacatgctc gctcctttga gaatctcaaa c                            401
```

```
                <210> 116
                <211> 301
                <212> DNA
                <213> Homo sapien
```

34

<400> 116
```
ngatttaatt gnnagcttct ttttaatgga atnnttggct aaaatgaatt gatgattatg        60
aatatcccta ggaggagtta gcatggannn tgatcatttt cttngnactc ctttangaca       120
nggaaacagg natcagcatg anggtancan aaaccttatn accnangcgc acganctgac       180
ttcttccaaa gagttgnggt tccgggcagc ggtcattgcc gtgcccattg ctggagggct       240
gattctagtg ntgcttatta tgctggccct gaggatgctt ccaanatgaa aataagangc       300
t                                                                       301
```

<400> 117
```
aattgcaact ggacttttat tgggcagtta cnacaacnaa tgttttcana aaaatatttg        60
gaaaaaatat accacttcat agctaagtct tacagagaan aggatttgct aataaaactt       120
aagttttgaa aattaagatg cnggtanagc ttctgaacta atgcccacag ctccaaggaa       180
nacatgtcct atttagttat tcaaatacca gttgagggca ttgtgattaa gcaaacaata       240
tatttgttan aactttgntt ttaaattact gntncttgac attacttata aaggagnctc       300
taactttcga tttctaaaac tatgtaatac aaaagtatan ntttccccat tttgataaaa       360
gggccnanga tactgantag gaa                                               383
```

<400> 118
```
ctgctagaat cactgccgct gtgctttcgt ggaaatgaca gttccttgtt ttttttgttt        60
ctgtttttgt tttacattag tcattggacc acagccattc aggaactacc ccctgcccca       120
caaagaaatg aacagttgta gggagaccca gcagcacctt tcctccacac accttcattt       180
tgaagttcgg gtttttgtgt taagttaatc tgtacattct gtttgccatt gttacttgta       240
ctatacatct gtatatagtg tacggcaaaa gagtattaat ccactatctc tagtgcttga       300
c                                                                       301
```

<400> 119
```
taaggacatg gaccccggc tgattgcatg gaaaggaggg gcagtgttgg cttgtttgga        60
tacaacacag gaactgtgga tttatcagcg agagtggcag cgctttggtg tccgcatgtt       120
acgagagcgg gctgcgtttg tgtggtgaat ggggaggaaa tgtcactgcc gaagaccaaa       180
aacaagcttc ttggtataaa agactcttac agaatatgtg tattgtaatt tattgatctg       240
gatgcttaag tgtcatggac agtaaatgaa tttgaacttt atgtttgagg acatgacatt       300
gggtttgaaa atataaactg cttttgagca gtttaagtca gggcatttga gaataaaata       360
ggaactttct cttcagtttg taaaactctc ttgccctctc t                          401
```

```
<210> 120
<211> 301
<212> DNA
<213> Homo sapien

<400> 120
tccagagata ccacagtcaa acctggagcc aaaaaggaca caaaggactc tcgacccaaa        60
ctgccccaga ccctctccag aggttggggt gaccaactca tctggactca gacatatgaa       120
gaagctctat ataaatccaa gacaagcaac aaaccttga tgattattca tcacttgggt        180
gagtgcccac acagtcaagc tttaaagaaa gtgtttgctg aaaataaaga aatccagaaa       240
ttggcagagc agtttgtcct cctcaatctg gtttatgaaa caactgacaa acacctttct       300
c                                                                        301


<210> 121
<211> 2691
<212> DNA
<213> Homo sapien

<400> 121
gcttgcccgt cggtcgctag ctcgctcggt gcgcgtcgtc ccgctccatg gcgctcttcg        60
tgcggctgct ggctctcgcc ctggctctgg ccctgggccc cgccgcgacc ctggcgggtc       120
ccgccaagtc gccctaccag ctggtgctgc agcacagcag gctccggggc cgccagcacg       180
gccccaacgt gtgtgctgtg cagaaggtta ttggcactaa taggaagtac ttcaccaact       240
gcaagcagtg gtaccaaagg aaaatctgtg gcaaatcaac agtcatcagc tacgagtgct       300
gtcctggata tgaaaaggtc cctggggaga agggctgtcc agcagcccta ccactctcaa       360
accttacga gaccctggga gtcgttggat ccaccaccac tcagctgtac acggaccgca       420
cggagaagct gaggcctgag atggaggggc cggcagctt caccatcttc gccctagca        480
acgaggcctg ggcctccttg ccagctgaag tgctggactc cctggtcagc aatgtcaaca       540
ttgagctgct caatgccctc cgctaccata tggtgggcag gcgagtcctg actgatgagc       600
tgaaacacgg catgaccctc acctctatgt accagaattc caacatccag atccaccact       660
atcctaatgg gattgtaact gtgaactgtg cccggctcct gaaagccgac caccatgcaa       720
ccaacggggt ggtgcacctc atcgataagg tcatctccac catcaccaac aacatccagc       780
agatcattga gatcgaggac accttgaga cccttcgggc tgctgtggct gcatcagggc       840
tcaacacgat gcttgaaggt aacggccagt acacgctttt ggccccgacc aatgaggcct       900
tcgagaagat ccctagtgag actttgaacc gtatcctggg cgacccagaa gccctgagag       960
acctgctgaa caaccacatc ttgaagtcag ctatgtgtgc tgaagccatc gttgcggggc      1020
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ctatcaacgg gaaggcgatc atctccaata agacatcct agccaccaac ggggtgatcc       1140
actacattga tgagctactc atcccagact cagccaagac actatttgaa ttggctgcag      1200
agtctgatgt gtccacagcc attgaccttt tcagacaagc cggcctcggc aatcatctct      1260
ctggaagtga gcggttgacc ctcctggctc ccctgaattc tgtattcaaa gatggaaccc      1320
ctccaattga tgcccataca aggaatttgc ttcggaacca cataattaaa gaccagctgg      1380
cctctaagta tctgtaccat ggacagaccc tggaaactct gggcggcaaa aaactgagag      1440
tttttgttta tcgtaatagc ctctgcattg agaacagctg catcgcggcc cacgacaaga      1500
gggggaggta cgggaccctg ttcacgatgg accgggtgct gacccccca atggggactg       1560
tcatggatgt cctgaaggga gacaatcgct ttagcatgct ggtagctgcc atccagtctg      1620
caggactgac ggagaccctc aaccgggaag gagtctacac agtctttgct cccacaaatg      1680
aagccttccg agccctgcca ccaagagaac ggagcagact cttgggagat gccaaggaac      1740
ttgccaacat cctgaaatac cacattggtg atgaaatcct ggttagcgga ggcatcgggg      1800
ccctggtgcg gctaaagtct ctccaaggtg acaagctgga agtcagcttg aaaaacaatg      1860
tggtgagtgt caacaaggag cctgttgccg agcctgacat catggccaca aatggcgtgg      1920
tccatgtcat caccaatgtt ctgcagcctc agccaacag acctcaggaa agagggatg        1980
aacttgcaga ctctgcgctt gagatcttca acaagcatc agcgttttcc agggcttccc       2040
agaggtctgt gcgactagcc cctgtctatc aaaagttatt agagaggatg aagcattagc      2100
ttgaagcact acaggaggaa tgcaccacgg cagctctccg ccaatttctc tcagatttcc      2160
acagagactg tttgaatgtt ttcaaaacca agtatcacac tttaatgtac atgggccgca      2220
ccataatgag atgtgagcct tgtgcatgtg ggggaggagg gagagagatg tactttttaa      2280
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atcatgttcc ccctaaacat ggctgttaac ccactgcatg cagaaacttg gatgtcactg   2340
cctgacattc acttccagag aggacctatc ccaaatgtgg aattgactgc ctatgccaag   2400
tccctggaaa aggagcttca gtattgtggg gctcataaaa catgaatcaa gcaatccagc   2460
ctcatgggaa gtcctggcac agttttgta aagcccttgc acagctggag aaatggcatc   2520
attataagct atgagttgaa atgttctgtc aaatgtgtct cacatctaca cgtggcttgg   2580
aggctttat ggggccctgt ccaggtagaa aagaaatggt atgtagagct tagatttccc   2640
tattgtgaca gagccatggt gtgtttgtaa taataaaacc aaagaaacat a   2691

<210> 122
<211> 683
<212> PRT
<213> Homo sapien

<400> 122
Met Ala Leu Phe Val Arg Leu Leu Ala Leu Ala Leu Ala Leu Ala Leu
1   5   10   15
Gly Pro Ala Ala Thr Leu Ala Gly Pro Ala Lys Ser Pro Tyr Gln Leu
            20   25   30
Val Leu Gln His Ser Arg Leu Arg Gly Arg Gln His Gly Pro Asn Val
        35   40   45
Cys Ala Val Gln Lys Val Ile Gly Thr Asn Arg Lys Tyr Phe Thr Asn
    50   55   60
Cys Lys Gln Trp Tyr Gln Arg Lys Ile Cys Gly Lys Ser Thr Val Ile
65   70   75   80
Ser Tyr Glu Cys Cys Pro Gly Tyr Glu Lys Val Pro Gly Glu Lys Gly
                85   90   95
Cys Pro Ala Ala Leu Pro Leu Ser Asn Leu Tyr Glu Thr Leu Gly Val
            100   105   110
Val Gly Ser Thr Thr Thr Gln Leu Tyr Thr Asp Arg Thr Glu Lys Leu
            115   120   125
Arg Pro Glu Met Glu Gly Pro Gly Ser Phe Thr Ile Phe Ala Pro Ser
    130   135   140
Asn Glu Ala Trp Ala Ser Leu Pro Ala Glu Val Leu Asp Ser Leu Val
145   150   155   160
Ser Asn Val Asn Ile Glu Leu Leu Asn Ala Leu Arg Tyr His Met Val
                165   170   175
Gly Arg Arg Val Leu Thr Asp Glu Leu Lys His Gly Met Thr Leu Thr
            180   185   190
Ser Met Tyr Gln Asn Ser Asn Ile Gln Ile His His Tyr Pro Asn Gly
        195   200   205
Ile Val Thr Val Asn Cys Ala Arg Leu Leu Lys Ala Asp His His Ala
    210   215   220
Thr Asn Gly Val Val His Leu Ile Asp Lys Val Ile Ser Thr Ile Thr
225   230   235   240
Asn Asn Ile Gln Gln Ile Ile Glu Ile Glu Asp Thr Phe Glu Thr Leu
                245   250   255
Arg Ala Ala Val Ala Ala Ser Gly Leu Asn Thr Met Leu Glu Gly Asn
            260   265   270
Gly Gln Tyr Thr Leu Leu Ala Pro Thr Asn Glu Ala Phe Glu Lys Ile
        275   280   285
Pro Ser Glu Thr Leu Asn Arg Ile Leu Gly Asp Pro Glu Ala Leu Arg
    290   295   300
Asp Leu Leu Asn Asn His Ile Leu Lys Ser Ala Met Cys Ala Glu Ala
305   310   315   320
Ile Val Ala Gly Leu Ser Val Glu Thr Leu Glu Gly Thr Thr Leu Glu
                325   330   335
Val Gly Cys Ser Gly Asp Met Leu Thr Ile Asn Gly Lys Ala Ile Ile
            340   345   350

```
Ser Asn Lys Asp Ile Leu Ala Thr Asn Gly Val Ile His Tyr Ile Asp
        355                 360                 365
Glu Leu Leu Ile Pro Asp Ser Ala Lys Thr Leu Phe Glu Leu Ala Ala
        370                 375                 380
Glu Ser Asp Val Ser Thr Ala Ile Asp Leu Phe Arg Gln Ala Gly Leu
385                 390                 395                 400
Gly Asn His Leu Ser Gly Ser Glu Arg Leu Thr Leu Leu Ala Pro Leu
                405                 410                 415
Asn Ser Val Phe Lys Asp Gly Thr Pro Pro Ile Asp Ala His Thr Arg
                420                 425                 430
Asn Leu Leu Arg Asn His Ile Ile Lys Asp Gln Leu Ala Ser Lys Tyr
        435                 440                 445
Leu Tyr His Gly Gln Thr Leu Glu Thr Leu Gly Gly Lys Lys Leu Arg
        450                 455                 460
Val Phe Val Tyr Arg Asn Ser Leu Cys Ile Glu Asn Ser Cys Ile Ala
465                 470                 475                 480
Ala His Asp Lys Arg Gly Arg Tyr Gly Thr Leu Phe Thr Met Asp Arg
                485                 490                 495
Val Leu Thr Pro Pro Met Gly Thr Val Met Asp Val Leu Lys Gly Asp
                500                 505                 510
Asn Arg Phe Ser Met Leu Val Ala Ala Ile Gln Ser Ala Gly Leu Thr
                515                 520                 525
Glu Thr Leu Asn Arg Glu Gly Val Tyr Thr Val Phe Ala Pro Thr Asn
        530                 535                 540
Glu Ala Phe Arg Ala Leu Pro Pro Arg Glu Arg Ser Arg Leu Leu Gly
545                 550                 555                 560
Asp Ala Lys Glu Leu Ala Asn Ile Leu Lys Tyr His Ile Gly Asp Glu
                565                 570                 575
Ile Leu Val Ser Gly Gly Ile Gly Ala Leu Val Arg Leu Lys Ser Leu
                580                 585                 590
Gln Gly Asp Lys Leu Glu Val Ser Leu Lys Asn Asn Val Val Ser Val
        595                 600                 605
Asn Lys Glu Pro Val Ala Glu Pro Asp Ile Met Ala Thr Asn Gly Val
        610                 615                 620
Val His Val Ile Thr Asn Val Leu Gln Pro Pro Ala Asn Arg Pro Gln
625                 630                 635                 640
Glu Arg Gly Asp Glu Leu Ala Asp Ser Ala Leu Glu Ile Phe Lys Gln
                645                 650                 655
Ala Ser Ala Phe Ser Arg Ala Ser Gln Arg Ser Val Arg Leu Ala Pro
                660                 665                 670
Val Tyr Gln Lys Leu Leu Glu Arg Met Lys His
        675                 680
```

```
        <210> 123
        <211> 1205
        <212> DNA
        <213> Homo sapien

        <400> 123
        ccagtcagca gagggacagg aatcattcgg ccactgttca gacgggagcc acacccttct      60
        ccaatccaag cctggcccca gaagatcaca aagagccaaa gaaactggca ggtgtccacg     120
        cgctccaggc cagtgagttg gttgtcactt acttttctct gggaagaa  attccatacc     180
        ggaggatgct gaaggctcag agcttgaccc tggccacttt aaagagcag  ctcagcaaaa     240
        aggaaatta  taggtattac ttcaaaaaag caagcgatga gtttgcctgt ggagcggtgt     300
        ttgaggagat ctgggaggat gagacggtgc tcccgatgta tgaaggccgg attctgggca     360
        aagtggagcg gatcgattga gccctgcggt ctggctttgg tgaactgttg gagcccgaag     420
        ctcttgtgaa ctgtcttggc tgtgagcaac tgcgacaaaa cattttgaag gaaaattaaa     480
        ccaatgaaga agacaaagtc taaggaagaa tcggccagtg ggccttcggg agggcggggg     540
```

38

```
gaggttgatt ttcatgattc atgagctggg tactgactga gataagaaaa gcctgaacta      600
tttattaaaa acatgaccac tcttggctat tgaagatgct gcctgtattt gagagactgc      660
catacataat atatgacttc ctagggatct gaaatccata aactaagaga aactgtgtat      720
agcttacctg aacaggaatc cttactgata tttatagaac agttgatttc ccccatcccc      780
agtttatgga tatgctgctt taaacttgga aggggagac aggaagtttt aattgttctg       840
actaaactta ggagttgagc taggagtgcg ttcatggttt cttcactaac agaggaatta     900
tgctttgcac tacgtccctc caagtgaaga cagactgttt tagacagact ttttaaaatg      960
gtgccctacc attgacacat gcagaaattg gtgcgttttg tttttttttc ctatgctgct     1020
ctgttttgtc ttaaaggtct tgaggattga ccatgttgcg tcatcatcaa catttttgggg    1080
gttgtgttgg atgggatgat ctgttgcaga gggagaggca gggaaccctg ctccttcggg     1140
ccccaggttg atcctgtgac tgaggctccc cctcatgtag cctccccagg cccagggccc     1200
tgagg                                                                 1205
```

        <210> 124
        <211> 583
        <212> DNA
        <213> Homo sapien

        <400> 124
```
ccaagaagca gtggccttat tgcatcccaa accacgcctc ttgaccaggc tgcctccctt       60
gtggcagcaa cggcacagct aattctactc acagtgcttt taagtgaaaa tggtcgagaa      120
agaggcacca ggaagccgtc ctggcgcctg gcagtccgtg ggacgggatg gttctggctg      180
tttgagattc tcaaaggagc gagcatgtcg tggacacaca cagactattt ttagattttc      240
ttttgccttt tgcaaccagg aacagcaaat gcaaaaactc tttgagaggg taggagggtg      300
ggaaggaaac aaccatgtca tttcagaagt tagtttgtat atattattat aatcttataa      360
ttgttctcag aatcccttaa cagttgtatt taacagaaat tgtatattgt aatttaaaat      420
aattatataa ctgtatttga ataagaatt cagacatctg aggttttatt tcatttttca      480
atagcacata tggaattttg caaagattta atctgccaag ggccgactaa gagaagttgt      540
aaagtatgta ttatttacat ttaatagact tacagggata agg                       583
```

        <210> 125
        <211> 783
        <212> DNA
        <213> Homo sapien

        <400> 125
```
tcaaccatac atactgcttc cactagctaa taccaaatgc aggttctcag atccagacaa       60
atggaggaaa agaacattta tgcttccgtt tcagaaagcc aagtcgtagt tttggcccctt     120
cctttctcta aagtttattc ccaaaaacag gtagcattcc tgattgggca gagaagagga      180
tattttcagc ccacatctgc tgcaggtatg tcattttctc ccatcttcac tgtgactagt      240
aaagatctca ccacttctct ttggaatttc caactttgct tgtgattgaa tgtcacttcg      300
tgaatttgta ttatgtcaga tcacttggca ttgctcttcc atatgcatca agttgccagg      360
cactgttgcg ctgtcgggcc cactggaatc cacgggggtg aaacaaattc aattatgctt      420
ttacagatcc tgctcaaaaa aggtttcaac tgcttaacca agtacagctc attcttccac      480
cttcttactc tgcaaccaaa ccaagtgccc catactacag gtaggtgccg agaaattccg      540
cagcagaaaa tccaaaatca tttctgaaac ctccttgcta acaaaagttc tttttttctc      600
caaacagcat ataaaatgat caagtcttga aagagaaaag aagcaaagta gcaaatacat      660
caacaattca ctatcagaaa cacataaaat cccagagaga gagaaggcag tatctctgaa      720
tcatggatgg acttggaaag ttcggaagga ttccgagtgc ttcctttcag aaagacaatt      780
ctg                                                                   783
```

        <210> 126
        <211> 604
        <212> DNA
        <213> Homo sapien

        <400> 126
```
cctgctagaa tcactgccgc tgtgctttcg tggaaatgac agttccttgt ttttttttgtt       60
```

39

```
tctgtttttg ttttacatta gtcattggac cacagccatt caggaactac cccctgcccc     120
acaaagaaat gaacagttgt agggagaccc agcagcacct ttcctccaca caccttcatt     180
ttgaagttcg ggtttttgtg ttaaagttaa tctgtacatt ctgtttgcca ttgttacttg     240
tactatacat ctgtatatag tgtacggcaa aagagtatta atccactatc tctagtgctt     300
gactttaaat cagtacagta cctgtacctg cacggtcacc cgctccgtgt gtcgccctat     360
attgagggct caagctttcc cttgtttttt gaaaggggtt tatgtataaa tatattttat     420
gccttttat tacaagtctt gtactcaatg acttttgtca tgacattttg ttctacttat      480
actgtaaatt atgcattata aagagttcat ttaaggaaaa ttacttggta caataattat     540
tgtaattaav agatgtagcc tttattaaaa ttttatattt ttcaaaaaaa aaaaaaaaaa     600
aaaa                                                                  604
```

        <210> 127
        <211> 417
        <212> DNA
        <213> Homo sapien

        <400> 127
```
ctgagcctct gtcaccagag aaggctgagg ccccaatggc acacctcaga aacctacacc      60
ccgaggctgg acggctggac tcctgagcac aagctccctc tcgcaccctt tgccagacag     120
tttgtctcca atttcaaaact gacctaaggc tcttactcct ggattttttg tttttaaacc    180
ttctcccagc cagtcttcgg gagggcatga ttagagaagt gctcctttgc tgatggagga     240
ggggacctaa ggaagaaggt ggatcccagg tgcctcctct ctaattgatc ctccccacct     300
agtttccttt gcctctcttc cttctaccag gtcatgtttt ttactctctg cccttctgc     360
ctcctagcat ttcaaaaact gtagagtgca ccccatagtg gacatttta gtccagg        417
```

        <210> 128
        <211> 657
        <212> DNA
        <213> Homo sapien

        <400> 128
```
ccacactgaa atgcagttta atgtggaaac ttttctaaat acatattgta gcatctttgg      60
acatcaacgt gtggcctgaa attttatta ttgttccctc ttctcctcca ttaaaaaaaa      120
aatctccttg tggtatttag tcatttacca ttaacacata ttatggctta aaaagggcca     180
tcccttcctt ttctgagctg gagttcttca cgctcacctt tgatgcatgg ccttagctgg     240
ttactttgcc ttggtttggt catgaacatt ggggttagtg gcctggcaac ttgaatgcat     300
atggaaagaa caatgccaag tgatctgaca taatacaaat tccgaagtga cattcaatca     360
caagcaaagt tggaaattcc aaagagaagt ggtgagatct ttactagtca cagtgaagat     420
gggagaaaat gacatacctg cagcagatgt gggctgaaaa tatcctcttc tctgcccaat     480
caggaatgct acctgttttt gggaataaac tttagagaaa ggaagggcca aaactacgac     540
ttggctttct gaaacggaag cataaatgtt cttttcctcc atttgtctgg atctgagaac     600
ctgcatttgg tattagctag tggaagcagt atgtatggtt gaagtgcatt gctgcag       657
```

        <210> 129
        <211> 1220
        <212> DNA
        <213> Homo sapien

        <400> 129
```
cgcgtgctcg gctcacacca acaaggcaag ccaaaggcgc ccctccccag agggatccct      60
aacgtgccca gcatgtagat tctggactaa cagacaacat acattcaccg ctggtcaccc     120
agatcctcat tcaaacccac tgctggcaca tccctttcct tactttgccc tgtgctacca     180
gccacggaag gagcctctct tgttttttct ataaaatggg taggcaggag aaaagcaggt     240
gccctaagat tgctctaagg cccagcatgt ggttacagtt ctctgacttg cagaacctgc     300
caggtgtatg ctacaagtt atcctcgtgc tgatctgtct cattactaag ttaatggaga     360
agacagaaag gtaaaaatca cgtgtagcaa gaacaactct tatttcacaa actcaggtat     420
gaaacgaaac gcctgtcctt catggaactg cttttagctc ctgtcttttc aaaatggcag     480
agggagttcc tacacacact ttttccctgg aggccaaggt ctaggggtag aaaggggagg     540
```

40

```
ggtggggcta ccaggtagca gttgacaacc caaggtcaga ggagtggccc tcagtgtcat      600
ctgtccacag tgatacctgc caagatgacc actgacccac atctggtctt agtcattggt      660
ctcctcagat ttctgggggcc acctgcaagc cccattccat tcctacagat ctctcagcca      720
cctgtaagtc ctttgtgaag atgtgggtga cacaggggga caggaaaacc catttctcaa      780
cccagatcca tgtctccact gcttctactc tgggttggga ttcaggaaga caggcacagt      840
cctctctgtt catagaaaca cctgccagtg tcaaggattc cagtcaggtg tctatcccaa      900
ctggtcaggg agagaagggc agacccattc tcaaagacca ccatgtccaa ggtctgacag      960
ctccccactg gctgcccccca caggggcttt aggctggtct gggtcatggg gaagcgtccc     1020
tcttatcgct ggtctgtgtt ctcctggatt tggtatctat gttggtacga ctcctggcct     1080
tttatctaaa ggactttggc ttttgtaaat cacaagccaa taatagactt ttttctcccc     1140
ctctgttttt tgctgtgtca tctctgcctt gagactgcct tgagacagtg cttgccttga     1200
gagagtgagc caattaacag                                                  1220
```

```
        <210> 130
        <211> 1274
        <212> DNA
        <213> Homo sapien

        <400> 130
ccatatgagt ttgccatctc catggatgcc atttcaatgc cttcagggta atcattctct        60
ccccaaagac tgcccacggg gtcatcactc ctgtgacgaa atgagggctg gattgaagat       120
gttctgctga gcaccccct ggtcatcttt ggggtctcag aagagccata atcatgacca       180
ttctcagcat ctgaataatc aggttctctc caagtgcttg gcaagttctg attgtcctca       240
gcactgggat agtctggctc cccaaaaaag ggtggagagt taggttgaat gtcagcgcct       300
ggataatcag gctttcccag agagtctgcg tatggattga ttctaaaact tgtatgttcc       360
agattctttc tggatcctgg atggttcaaa ttggctctgg tccaggatg atcagagttg        420
ctctgagctc cagggtagtc cggttctaag gagccaaaat gatctggatg tgttctggag       480
cctgcatagt ttccactgct gctggagcct gcaaaatcag gatttcgttg agatccaggg       540
tagtctggtt gtctggatga tgctcggtgg tagggatgac tctgaaattc actataatct       600
ggctctggta gagaggtagg atggtctggg cttgttctag aggctgcaga gtatgcattg       660
cttctggtgc cagaatagtc tggattactc agagatctag gataaatttgg ttctgccaga      720
gacccaggat agtctggacg tgttctggag gctacagagt atggattgct cctggtgccg       780
gggtaatctg gattgttcag aggacctgga acatctggat aaccttgagt tttcaaatac       840
ccctgcgtac ggttctgaga ccctgaatag tcagggtaat ctgggtcttc ctcagaccag       900
ttattcctgt agtaggcaga catgttggta tggactcttc accctgggagt ggtaaactgt      960
cccagcattt gcaattactc agggatcttt ttttttcac ttttttgccc ttattgttct       1020
tgctttgtcc caagtagatg caaatgttgt gcaaaccaac ttgatcttaa gatgttgtta      1080
agaacactgg agtcacgtgt ccatgggtcc ttcaggctgg cttttgatgg gagctgggat      1140
gcagatgatt tacggagggt tataatctgt gatgctggtc tgaagtctga atattccaag      1200
ttgctgactg caggcagagc ctcatgtcct cctggcgctc ctgttgccgc tgcttgcgct      1260
ggccctcggg tcga                                                        1274
```

```
        <210> 131
        <211> 554
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(554)
        <223> n = A,T,C or G

        <400> 131
ctgtaattct gcctttttcta ccttcattcc atccttcctc tgcccagata aagkccagca       60
gaaattcctc ctttctacct ctctgggact ctgagacagg aaatcttcaa ggaggagttt      120
ttccctcccc actattctta ttctcaaccc ccagaggaac caaggctgct gtacccacct      180
cagggacaga actccacact atagtgggaa agcttcaggg acccctcctt ttagtgctca      240
gggctcacct atgctactgg tccttttggc aaaaaaggaa aatgatagag ccagggttgc      300
```

41

```
ccctgatgta gcagccttac tgtggagggg ccaaagctgg tgttcagagc tcacccaagg      360
agggaggtga taaggtgtca tgcgttctgc tgaacccact ggntggtatg aacatgaggc      420
ttggggtgag ggaaaccaag taggggttgg agaaggagca gcacctttgt macacctggc      480
tacccatagc tagctttctg ccctcaaaaa ctcagccttc aagggatcca gcccacacac      540
gccacaggca gcag                                                        554
```

```
        <210> 132
        <211> 787
        <212> DNA
        <213> Homo sapien

        <400> 132
ctggtcaccc aactcttgtg gaagagggga attgagatcg agtactgaat atctggcaga       60
gaggctggaa tccttcagcc ccagagccca gggaccactc cagtagatgc agagaggggc      120
ctgcccaggg gtcagggcag tgggtatcac tggtgacatc aagaatatca gggctgggga      180
ggcatctttg tttcctggtg ccctcctcaa agttgctgac actttgggga cgggaagggg      240
tagaagtagg gctgctcctt ttggagctgg agggaataga cctggagaca gagttgaggc      300
agtcgggctg tccaggttct aagcatcaca gcttctgcac tgggctctga ggagattctc      360
agccagagga tcccagcctc ctcctccctc aaatgtcagt ccaagcaaat accaaagcaa      420
cgcatcgatt ttgtggaagt caattagaga tgtggggagc tatcggagac aagcactatt      480
gtaccttttc acctccacac ttgtcacaag cagggactgt ctcctcccca ctttgcttgc      540
cacgcctgcc atggcttgag ctggggtgag gagtggtctt tatcttcttt gggagatcct      600
gactggttgc gcacttgcta agggcaggaa gtctggaggg ctgcaggaat ggtgccgttg      660
ataaacaggt ggacttataa tcatcatgca ctgcaattgt agaacatagt ctcctgcctt      720
ttctcatttg tataattgtc tgggtcaata ttctcccaat attgggaggg gctctgcagc      780
cctccag                                                               787
```

```
        <210> 133
        <211> 219
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(219)
        <223> n = A,T,C or G

        <400> 133
tactgctcta agttttgtna aatttttcat attttaattt caagcttatt ttggagagat       60
aggaaggtca tttccatgta tgcataataa tcctgcaaag tacaggtact ttgtctaaga      120
aacattggaa gcaggttaaa tgttttgtaa actttgaaat atatggtcta atgtttaagc      180
agaattggaa nagactaata tcggttaaca ataacaac                             219
```

```
        <210> 134
        <211> 234
        <212> DNA
        <213> Homo sapien

        <400> 134
gattttaaaa acatcatgac tttgaactga aaaacataca cgtttagcac acaaatattg       60
taatatgaat gaactccaac tccatttgaa aacatgtgaa tcaaagtaca gttttagaag      120
ttagtaattc acatttaagc aagttagcgc cttgctgaat acagcctttg taaaaaagag      180
acttagtgca tattttaatg gtacattgtg gttttgtacc atttggttga gttg           234
```

```
        <210> 135
        <211> 414
        <212> DNA
        <213> Homo sapien
```

42

```
     <400> 135
ctccagcctg gctatatccg gtcccgctat aacctgggca tcagctgcat caacctcggg        60
gctcaccggg aggctgtgga gcactttctg gaggccctga acatgcagag gaaaagccgg       120
ggcccccggg gtgaaggagg tgccatgtcg gagaacatct ggagcaccct gcgtttggca       180
ttgtctatgt taggccagag cgatgcctat ggggcagccg acgcgcggga tctgtccacc       240
ctcctaacta tgtttggcct gccccagtga cagtgggacg ggctgccctg tgagtgtcca       300
cctggggatt aaatatgtct tcaacaaggg aggcctggct tctacaatgg tttaggtaaa       360
ggggcctttg aagtagttct ggccaggctt gcaatacaca caacacaaga gcca             414

     <210> 136
     <211> 461
     <212> DNA
     <213> Homo sapien

     <400> 136
gaagtgatta ataggtttat ttgcatatac acagagaaga gtcagcattg ttgggtgaga        60
agaggcaggc tgtgaggagg taaggcttca gcagaggaag gcaccttgac agacaacacg       120
agactcctat taaatcagca cagttgcaaa cttcacctgc ctcaagccaa cagctcattg       180
aactcatatg tcgattgaga atcatttaca aaaccaggag agaaacaatg ggaagagcaa       240
cggtctctca tccctggacc tgacactcaa aacattatgt acaggatgca ggaacaaaat       300
ctgtctgatc agtgccctct cctgctggga aaaacaccca tcacggaaga atttggggat       360
taaatatgtc ttcaacaagg gaggcctggc ttctacaatg gtttaggtaa agggggcctttt      420
gaagtagttc tggccaggct tgcaatacac acaacacaag a                           461

     <210> 137
     <211> 269
     <212> DNA
     <213> Homo sapien

     <400> 137
atagcaaatg gacacaaatt acaaatgtgt gtgcgtggga cgaagacatc tttgaaggtc        60
atgagtttgt tagtttaaca tcatatattt gtaatagtga aacctgtact caaaatataa       120
gcagcttgaa actggcttta ccaatcttga aatttgacca caagtgtctt atatatgcag       180
atctaatgta aaatccagaa cttggactcc atcgttaaaa ttatttatgt gtaacattca       240
aatgtgtgca ttaaatatgc ttccacagt                                         269

     <210> 138
     <211> 452
     <212> DNA
     <213> Homo sapien

     <220>
     <221> misc_feature
     <222> (1)...(452)
     <223> n = A,T,C or G

     <400> 138
ctccatggga ggcaaaatat agagaattta tggtgcccaa ctcttatgta atcactggac        60
taatcttccc tggtaactat gcaacatttg gacagaaagg cacacaaaaa agtttaaata       120
tttcatgtgc caatctggaa aaaaataatt taaatcaaca gaacagacag tacatctaca       180
caaatgagga aagcagaaaa gatacctcac attcatttat ctcaggtttc aaagtggctt       240
caatgctaaa gtaaatgtat taacatttgg aaaatacaag acaatttttt tgtttgtttt       300
caattttttt agctctatac aatgattaca acataagaca aaaaaaaaaa aaaaacacaa       360
aaaacaaaac aaaaaaggag ttcaggactt gttatcagtg tccaagtggc taanaactgg       420
ttcccataac aagcattgaa agttaaggcc cc                                     452

     <210> 139
```

```
                <211> 474
                <212> DNA
                <213> Homo sapien

                <400> 139
tgtgcctcat tgaggttaca attgaaacag atgtgagcac ctgagagact ttccctgatt          60
atattcctcc acaaaccact gtaccatatt accttatttt atcttcttga aattcttatt         120
cattggcttg tttgttgtct ctttgcatta gatatatgta agctccttgg cataaatttg         180
acattggtag gggactgaca ttctaacctg gcccaggccc taggagagag ataactccac         240
aaagcagcac atactatctt aggttagcag ggagctaact caccatgtag cagatgaaaa         300
aaaccaaacc cagcactgtg cataaatacc acttgccaag aagtcaggtc ctcggcaacc         360
gagaatcaac ctcagcacaa acgcaggtgg ctgggctctg ttccccctta gccaccacct         420
cagcctctcc cctcccctgc cccaagtgcc caagagcttg gctctctgtg cttt             474

                <210> 140
                <211> 487
                <212> DNA
                <213> Homo sapien

                <400> 140
cttccctgcc tcgtgttcct gagaaacgga ttaatagccc tttatccccc tgcaccctcc          60
tgcaggggat ggcactttga gccctctgga gccctcccct tgctgagcct tactctcttc         120
agactttctg aatgtacagt gccgttggtt gggatttggg gactggaagg gaccaaggac         180
actgacccca agctgtcctg cctagcgtcc agcgtcttct aggagggtgg ggtctgcctg         240
tcctggtgtg gttggtttgg ccctgtttgc tgtgactacc cccccccctc cccgaaccga         300
gggacggctg cctttgtctc tgcctcagat gccacctgcc ccgcccatgc tccccatcag         360
cagcatccag actttcagga agggcagggc cagccagtcc agaaccgcat ccctcagcag         420
ggactgataa gccatctctc ggagggcccc ctaatacccca agtggagtct ggttcacacc         480
ctggggg                                                                   487

                <210> 141
                <211> 248
                <212> DNA
                <213> Homo sapien

                <220>
                <221> misc_feature
                <222> (1)...(248)
                <223> n = A,T,C or G

                <400> 141
ttaaagatgg ggaaatgagg cctgnaaata gaaaagattt gcctagagtc acacacactg          60
tcaggtcagg tagagtcaaa atcaggcacc ccgactcaca gactgcttca cattgccatc         120
agagattgtc ctgcaacaat attatgttta gttctactgc agaatgataa ctggatctta         180
cccccttgc ctgatctggc cacaaacttg tttttcaggt ctttccatta ggctctcttc         240
agctaatt                                                                  248

                <210> 142
                <211> 173
                <212> DNA
                <213> Homo sapien

                <400> 142
tactaagatt gtccaagcct ccctcttaaa actttctttc cctttagagg aatcattact          60
tcgtattaaa agtttctact tccttgtaga atatctacat ccaatgggcc atggcacaaa         120
atttaagtct agaaagaatc ttaaaggctc atcttatagt aaccagaggc agg              173

                <210> 143
```

44

```
<211> 511
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(511)
<223> n = A,T,C or G

<400> 143
cctcgtcaga ggggtggttc ctggtnacct gtactccacg gacctcggtg aagcaaaagc      60
ttcagggcag agggaatgag gcaacccagt ggcagccccg ctgggccccg tggctcctgc     120
tctcctattg gacgtagagg caggggagag acttctctat acaaatattc tcatcacaga     180
agggatgatc cttgctgctc tgccgtaggg tttttgatgc tgagctatgc tgcacatgac     240
gttaacctaa agaacttgga ctgagctttt aaaaaaggac agcaaacaat tttataatcc     300
ttaaagtgta atagacggtt acactagtgc agggtattgg ggaggctctt tgggtgtgga     360
ggctgtcact tgtatttatt gtgactctaa atctttgata gtaaaacaaa tgtaaaaaga     420
aatgtttgcc accagatggg aatagaagtt ccaataagca ggctggaatg ggtggctata     480
cgttgtatca cgaggaagtt ttagactctg a                                    511
```

```
<210> 144
<211> 190
<212> DNA
<213> Homo sapien

<400> 144
cattcttctg tcacatgcca attcagttgt caatcccatt gtctatgctt accggaaccg      60
agacttccgc tacacttttc acaaaattat ctccaggtat cttctctgcc aagcagatgt     120
caagagtggg aatggtcagg ctggggtaca gcctgctctc ggtgtgggcc tatgatctag     180
gctctcgcct                                                            190
```

```
<210> 145
<211> 169
<212> DNA
<213> Homo sapien

<400> 145
gatgtggtta tctcctcaga tggccagttt gccctctcag gctcctggga tggaaccctg      60
cgcctctggg atctcacaac gggcaccacc acgaggcgat ttgtgggcca taccaaggat     120
gtgctgagtg tggccttctc ctctgacaac cggcagattg tctctggat               169
```

```
<210> 146
<211> 511
<212> DNA
<213> Homo sapien

<400> 146
atctagagaa gatttgggaa acacatgata gctatggtta aatacttaac agggcaatca      60
cagggaagat gactagattt cctaacatcc atgagtgaaa tttatagaag tatactctct     120
gacttgatat aaaggaagat tttaaaaaac atgactgttc aggagtgttc aagtagggtc     180
agatgaccag tgattgggaa tacttcgtaa gcaggagcaa gtaagatctg agccactgtt     240
ctatcggtag ggtgtctgtg gtattccttg gtcaaagaag tactctaagc aacttcagtc     300
tcacgaatta ctatcaccct cgtgggcata catgatggtt accctaaaga ggaagtttca     360
gaaggcagta atattggatc ctggaatagt cagacaggag ccttcatgca gataccctt      420
tcagttctcc atacacccat tcacaagtgg tcacaaaaac acccagtacc tttacttggc     480
tttacccact taacaatatg ctcaatatga g                                    511
```

```
<210> 147
```

45

```
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 147
gaccagttga gttcttcctg gctattgtat aatccacagc cacactgtga aagcaaatct      60
ggccagttag caacacaggg agaatctgcc tgaactgacc aaaggtgtcc atacttcatg     120
tcagtgagaa tttcacctcc atcatgttct aaagagccaa caacagattc tagggcactg     180
caaatgctt cagcaattaa ttgaagttct gtttgagtac attcatcatc tttgagaatg      240
ctttctgggt cgttgtgagt cttgtgtctg atatatgcag ccaaatgagt ttcagtacag     300
ccacctccca acaaagccca tggttccttg agtgttaact gcaggacatg cagtgccgtc     360
tgacacgtga gcttcagctc atcccangca gtgtcatttc tgttgcagag aagccaagct     420
g                                                                    421

<210> 148
<211> 237
<212> DNA
<213> Homo sapien

<400> 148
acacaccact gttggccttc catctgggtt aagtcaactg tgagtagaaa ccgaagataa      60
cagttttgta ttcataatgg ccttttcata ctccaagtac ttttgagcac agagcctctt     120
gcttctgacc tggcacttgg aacacagata tatatatctt ttgttctgtc cctgggaaac     180
tgatatttgt gtaagacaac caccagatat tttctctaat aaaatcttct aaaatta        237

<210> 149
<211> 168
<212> DNA
<213> Homo sapien

<400> 149
agagaaagtt aaagtgcaat aatgtttgaa gacaataagt ggtggtgtat cttgtttcta      60
ataagataaa ctttttgtc tttgctttat cttattaggg agttgtatgt cagtgtataa      120
aacatactgt gtggtataac aggcttaata aattctttaa aaggagag                  168

<210> 150
<211> 68
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(68)
<223> n = A,T,C or G

<400> 150
ggtggggttt ggcagagatg antttaagtg ctgtggccag aagcggggg ggggtttggt       60
ggaaattt                                                              68

<210> 151
<211> 421
<212> DNA
<213> Homo sapien
```

46

```
        <400> 151
aggtgacacg tattcgggat gaaagtataa tagtcattcc ttcaacccct gcatttatgg         60
actctggaaa tcgaagatcc acagtgagta aagatgttcg tccaaagaca aaaaatagaa        120
acagctcaac aaagcgagag acaaaaaaac aaaatggcac tgtggctctg cctttgaagt        180
ctgggctcca gcagagggct gatcttccca caggagacga gacggcctat gacactctcc        240
agaactgttg tcagtgccga attttacttc ccttgcccat tctaaatgag caccaggaga        300
agtgccagag gttagctcac caaaagaaac tccagtgggg ctggtgagat ggctcagcgg        360
gtaagagcac ccgactgctc ttccgaaggt ccggagttca atcccagca accacatggt         420
g                                                                         421

        <210> 152
        <211> 507
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(507)
        <223> n = A,T,C or G

        <400> 152
gaattcggca cnagctcgtg ccgccagggt nggtccnttt tttgctccgc ctcgccanga         60
cttcctacag ctatcgccag tcgtcggcca cgtcntcctt cngaggcctg ggcggcggct        120
ccgtgcgttn tgggccgggg gtcgcctttc nctcnccag cattcacggg ggctccggcg         180
gccgcggcgt atccgtgtcc tccgcccgct ntgtgtcctc gtcctcctcn ggggcctacg        240
gctngctgct acngcggctt cctgaccgct tccnacgggc tgctggcngg caacgagaag        300
ctaaccatgc agaacctnaa cnaccgcctg gcctcctacc tgnacaaggt gcgcnccctg        360
taggcggcca acggcnagct agaggtgaag atccnctact gggtaccaga agcaggggcc        420
tgggccctgc ccgactacag ccactnctnc acnaccatgc agtacctgcn ggganaagat        480
tntngggngc caccatngag aactgca                                            507

        <210> 153
        <211> 513
        <212> DNA
        <213> Homo sapien

        <400> 153
gaattcggca cgaggtggct cagatgtcca ctactgggag tatggtcgaa ttgggaattt         60
tattgtgaaa aagcccatgg tgctgggaca tgaagcttcg ggaacagtcg aaaaagtggg        120
atcatcggta aagcacctaa aaccaggtga tcgtgttgcc atcgagcctg gtgctccccg        180
agaaaatgat gaattctgca agatgggccg atacaatctg tcaccttcca tcttcttctg        240
tgccgcgccc cccgatgacg ggaacctctg ccggttctat aagcacaatg cagccttttg        300
ttacaagctt cctgacaatg tcacctttga ggaaggcgcc ctgatcgagc cactttctgt        360
ggggatccat gcctgcagga gaggcggagt taccctggga cacaaggtcc ttgtgtgtgg        420
agctgggcca atcgggatgg tcactttgct cgtggccaaa gcaatgggag cagctcaagt        480
agtggtgact gatctgtctg ctacccgatt gtc                                     513

        <210> 154
        <211> 507
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(507)
        <223> n = A,T,C or G
```

47

<400> 154
```
ggcacgagct cgtgccgaat tcggcncgag cagacacaat ggtaagaatg gtgcctgtcc        60
tgctgtctct gctgctgctt ctgggtcctg ctgtcccca ggagaaccaa gatggtcgtt        120
actctctgac ctatatctac actgggctgt ccaagcatgt tgaagacgtc cccgcgtttc        180
aggcccttgg ctcactcaat gacctccagt tctttagata caacagtaaa gacaggaagt        240
ctcagcccat gggactctgg agacaggtgg aaggaatgga ggattggaag caggacagcc        300
aacttcagaa ggccagggag gacatcttta tggagaccct gaaagacatc gtggagtatt        360
acaacgacag taacgggtct cacgtattgc agggaaggtt tggttgtgag atcgagaata        420
acagaagcag cggagcattc tggaaatatt actatgatgg aaaggactac attgaattca        480
acaaagaaat cccagcctgg gtcccct                                           507
```

    <210> 155
    <211> 507
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(507)
    <223> n = A,T,C or G

    <400> 155
```
ggcacgagga gacctaaggg ctgagtntcg ggaacaggag aaagctctgt tggccctcca        60
gcagcagtgt gctgagcagg cacaggagca tgaggtggag accaggccc tgcaggacag        120
ctggctgcag gcccaggcag tgctcaagga acgggaccag gagctggaag ctctgcgggc        180
agaaagtcag tcctcccggc atcaggagga ggctgcccgg gcccgggctg aggctctgca        240
ggaggcccctt ggcaaggctc atgctgccct gcaggggaaa gagcagcatc tcctcgagca        300
ggcagaattg agccgcagtc tggaggccag cactgcaacc ctgcaagcct ccctggatgc        360
ctgccaggca cacagtcggc agctggagga ggctctgagg atacaagaag gtgagatcca        420
ggaccaggat ctccgatacc aggaggatgt gcagcagctg cagcaggcac ttgcccagag        480
ggatgaagag ctgagacatc agcagga                                           507
```

    <210> 156
    <211> 509
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(509)
    <223> n = A,T,C or G

    <400> 156
```
ggcacgagga cagagagaac cctgtngaaa gagcgttacc aggaggtcct ggacaaacag        60
aggcaagtgg agaatcagct ccaagtgcaa ttaaagcagc ttcagcaaag gagagaagag        120
gaaatgaaga atcaccagga gatattaaag gctattcagg atgtgacaat aaagcgggaa        180
gaaacaaaga agaagataga gaaagagaag aaggagtttt tgcagaagga gcaggatctg        240
aaagctgaaa ttgagaagct ttgtgagaag ggcagaagag aggtgtggga aatggaactg        300
gatagactca agaatcagga tggcgaaata aataggaaca ttatggaaga gactgaacgg        360
gcctggaagg cagagatctt atcactagag agccggaaag agttactggt actgaaacta        420
gaagaagcag aaaaagaggc agaattgcac cttacttacc tcaagtcaac tcccccaaca        480
ctggagacag ttcgttccaa acaggagtg                                        509
```

    <210> 157
    <211> 507
    <212> DNA
    <213> Homo sapien

48

```
        <400> 157
ggcacgaggg cagccctcct accggcgcac gtggtgccgc cgctgctgcc tcccgctcgc        60
cctgaaccca gtgcctgcag ccatggctcc cggccagctc gccttattta gtgtctctga       120
caaaaccggc cttgtggaat ttgcaagaaa cctgaccgct cttggtttga atctggtcgc       180
ttccggaggg actgcaaaag ctctcaggga tgctggtctg gcagtcagag atgtctctga       240
gttgacggga tttcctgaaa tgttgggggg acgtgtgaaa actttgcatc ctgcagtcca       300
tgctggaatc ctagctcgta atattccaga agataatgct gacatggcca gacttgattt       360
caatcttata agagttgttg cctgcaatct ctatcccttt gtaaagacag tggcttctcc       420
aggtgtaagt gttgaggagg ctgtggagca aattgacatt ggtggagtaa ccttactgag       480
agctgcagcc aaaaaccacg ctcgagt                                          507


        <210> 158
        <211> 507
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(507)
        <223> n = A,T,C or G

        <400> 158
ggcacgagtc gagctgtgcc tattcgngtc aatccaagag tgagtaatgt gaagtctgtc        60
tacaaaaccc acattgatgt cattcattat cggaaaacgg atgcaaaacg tctgcatggc       120
cttgatgaag aagcagaaca gaaacttttt tcagagaaac gtgtggaatt gcttaaggaa       180
ctttccagga aaccagacat ttatgagagg cttgcttcag ccttggctcc aagcatttat       240
gaacatgaag atataaagaa gggaattttg cttcagctct ttggcgggac aaggaaggat       300
tttagtcaca ctggaagggg caaatttcgg gctgagatca acatcttgct gtgtggcgac       360
cctggtacca gcaagtccca gctgctgcag tacgtgtaca acctcgtccc caggggccag       420
tacacgtntg ggaagggctc cagtgcannt ggcctnactg cntacgtaat gaaagaccct       480
gagacaaggn anctggnnct gnnacag                                          507


        <210> 159
        <211> 508
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(508)
        <223> n = A,T,C or G

        <400> 159
ggcacnanaa accaggatta tggtnnggat ccaaagattg ctaatgcaat aatgaaggca        60
gcagatgagg tagctgaagg taaattaaat gatcattttc ctctcgtggt atggcagact       120
ggatcaggaa ctcagacaaa tatgaatgta aatgaagtca ttagcaatag agcaattgaa       180
atgttaggag gtgaacttgg cagcaagata cctgtgcatc ccaacgatca tgttaataaa       240
agccagagct caaatgatac ttttcccaca gcaatgcaca ttgctgctgc aatagaagtt       300
catgaagtac tgttaccagg actacagaag ttacatgatg ctcttgatgc aaaatccaaa       360
gagtttgcac agatcatcaa gattggacgt actcatactc aggatgctgt tccacttact       420
cttgggcagg aatttagtgg ttatgttcaa caagtaaaat atgcaatgac aagaataaaa       480
gctgccatgc caagaatcta tgagctcg                                         508


        <210> 160
        <211> 508
        <212> DNA
        <213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(508)
<223> n = A,T,C or G

<400> 160
ggcacgagct tggagcaaag tcatctnaag gaattagagg acacacttca ggttaggcac      60
atacaagagt ttgagaaggt tatgacagac cacagagttt ctttggagga attaaaaaag     120
gaaaaccaac aaataattaa tcaaatacaa gaatctcatg ctgaaattat ccaggaaaaa     180
gaaaaacagt tacaggaatt aaaactcaag gtttctgatt tgtcagacac gagatgcaag     240
ttagaggttg aacttgcgtt gaaggaagca gaaactgatg aaataaaaat tttgctggaa     300
gaaagcagag cccagcagaa ggagaccttg aaatctcttc ttgaacaaga gacagaaaat     360
ttgagaacag aaattagtaa actcaaccaa aagattcagg ataataatga aaattatcag     420
gtgggcttag cagagctaag aactttaatg acaattgaaa aagatcagtg tatttccgag     480
ttaattagta gacatgaaga agaatcta                                        508


<210> 161
<211> 507
<212> DNA
<213> Homo sapien


<400> 161
ggcacgagcg ctaccggcgc ctcctctgcg gccactgagc cggagccggc ctgagcagcg      60
ctctcggttg cagtacccac tggaaggact taggcgctcg cgtggacacc gcaagcccct     120
cagtagcctc ggcccaagag gcctgctttc cactcgctag ccccgccggg ggtccgtgtc     180
ctgtctcggt ggccggaccc gggcccgagc ccgagcagta gccggcgcca tgtcggtggt     240
gggcatagac ctgggcttcc agagctgcta cgtcgctgtg gcccgcgccg gcggcatcga     300
gactatcgct aatgagtata gcgaccgctg cacgccggct tgcatttctt ttggtcctaa     360
gaatcgttca attggagcag cagctaaaag ccaggtaatt tctaatgcaa agaacacagt     420
ccaaggattt aaaagattcc atggccgagc attctctgat ccatttgtgg aggcagaaaa     480
atctaacctt gcatatgata ttgtgca                                        507


<210> 162
<211> 507
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G


<400> 162
ggcacgagca gctgtgcacc gacatgntct cagtgtcctg agtaagacca aagaagctgg      60
caagatcctc tctaataatc ccagcaaggg actggccctg ggaattgcca aagcctggga     120
gctctacggc tcacccaatg ctctggtgct actgattgct caagagaagg aaagaaacat     180
atttgaccag cgtgccatag agaatgagct actggccagg aacatccatg tgatccgacg     240
aacatttgaa gatatctctg aaaaggggtc tctggaccaa gaccgaaggc tgtttgtgga     300
tggccaggaa attgctgtgg tttacttccg ggatggctac atgcctcgtc agtacagtct     360
acagaattgg gaagcacgtc tactgctgga gaggtcacat gctgccaagt gcccagacat     420
tgccacccag ctggctggga ctaagaaggt gcagcaggag ctaagcaggc cgggcatgct     480
ggagatgttg ctccctggcc agcctga                                        507


<210> 163
<211> 460
<212> DNA
<213> Homo sapien
```

50

```
    <400> 163
ggcacgagaa ataactttat ttcattgtgg gtcgcggttc ttgtttgtgg atcgctgtga      60
tcgtcacttg acaatgcaga tcttcgtgaa gactctgact ggtaagacca tcaccctcga     120
ggttgagccc agtgacacca tcgagaatgt caaggcaaag atccaagata aggaaggcat     180
ccctcctgac cagcagaggc tgatctttgc tggaaaacag ctggaagatg ggcgcaccct     240
gtctgactac aacatccaga aagagtccac cctgcacctg gtgctccgtc tcagaggtgg     300
gatgcaaatc ttcgtgaaga cactcactgg caagaccatc acccttgagg tggagcccag     360  ·
tgacaccatc gagaacgtca aagcaaagat ccaggacaag gaaggcattc ctcctgacca     420
gcagaggttg atctttcccg gaaagcagct ggaagatggg                          460

    <210> 164
    <211> 462
    <212> DNA
    <213> Homo sapien

    <400> 164
ggcacgagcc ggatctcatt gccacgcgcc cccgacgacc gcccgacgtg cattcccgat      60
tccttttggt tccaagtcca atatggcaac tctaaaggat cagctgattt ataatcttct     120
aaaggaagaa cagacccccc agaataagat tacagttgtt ggggttggtg ctgttggcat     180
ggcctgtgcc atcagtatct taatgaagga cttggcagat gaacttgctc ttgttgatgt     240
catcgaagac aaaattgaagg gagagatgat ggatctccaa catggcagcc ttttccttag     300
aacaccaaag attgtctctg gcaaagacta taatgtaact gcaaactcca agctggtcat     360
tatcacggct ggggcacgtc agcaagaggg agaaagccgt cttaatttgg tccagcgtaa     420
cgtgaacatc tttaaattca tcattcctaa tgttgtaaaa ta                       462

    <210> 165
    <211> 462
    <212> DNA
    <213> Homo sapien

    <400> 165
ggcacgagga agccatgagc agcaaagtct ctcgcgacac cctgtacgag gcggtgcggg      60
aagtcctgca cgggaaccag cgcaagcgcc gcaagttcct ggagacggtg gagttgcaga     120
tcagcttgaa gaactatgat ccccagaagg acaagcgctt ctcgggcacc gtcaggctta     180
agtccactcc ccgccctaag ttctctgtgt gtgtcctggg ggaccagcag cactgtgacg     240
aggctaaggc cgtggatatc ccccacatgg acatcgaggc gctgaaaaaa ctcaacaaga     300
ataaaaaact ggtcaagaag ctggccaaga agtatgatgc gtttttggcc tcagagtctc     360
tgatcaagca gattccacga atcctcggcc caggtttaaa taaggcagga aagttccctt     420
ccctgctcac acacaacgaa aacatggtgg ccaaagtgga tg                       462

    <210> 166
    <211> 459
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(459)
    <223> n = A,T,C or G

    <400> 166
ggcacgagag ggacctgtnt gaatggntcc actagggttn anntgnctct tacttttaac      60
cantnaaatn gacctgcccg tgaanangcg ggcntgacac annaanacga gaagaccctа     120
tggagcttta atttattaat gcanacagna cctaacaaac ccacangtcc taaactacca     180
agcctgcatt aaaaatttcg gntggggcna cctcnnagca naacccaacc tccgagcaac     240
tcatgctaag acttcaccag tcaaagctga actactatac tcaattgatc caataacttg     300
accaacagan caagntaccc tagggataac ancacaatcc tattctagac cccttatnac     360
caatangntt tacacctcna tngnggaacc aggacatccg atggggcagn cgttattaaa     420
```

51

```
gttngttgnt aacnataaag tctacgtgat ctgagttag                        459
```

```
<210> 167
<211> 464
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(464)
<223> n = A,T,C or G

<400> 167
gaattgggac caacganaan cntgcggntc ttnttttgcn tccanngccc agctnattgc    60
tcagacacac atggggaagg tnaaggtcgg gagtcaacng atttggtngt attgnagcgt   120
ttggtcacca gngctgcttt taactctggn aaagtggata ttgttgtcat naatgacccc   180
tncattgacc tnaactacat ggtttacatg ttccaatatg attccaccca tggcaaattc   240
catngcaccg tnaaggctga gaacgggaag cttgtnatca atggaaatcc catcaccatc   300
tttcangaac ganatccntn caaaaatcaa anttgggggc gatgcttggc cncttgaagt   360
accgttcaan gggaannncc ccactttggc cgntntttnc aancccaccc caatttgggn   420
aaaaaaaaag gggnntttgg ggggggcct tttanntttt tttt                     464
```

```
<210> 168
<211> 462
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(462)
<223> n = A,T,C or G

<400> 168
ggcacgaggn nnaacctncg gggctggggc agcacgcctt gngcaancct gcactgcact    60
gaagacccgg tgccggaagc cgnnggcngc nacatgcagn aactgaacca gctgggcgcg   120
cancagttct cagacctgac agaggtgctt ttacacttcc taactgatcc anantangtg   180
gaaatattnt tngttnatnt catntgaatn atccancncc aatcatanca nntttnattn   240
cctcataanc nttgagaana gcnnccttnt gnttncanan ggtgctntga anangagtct   300
cacangcaan caggtccaag cggatttnnt aactntgggt cttantgang agaaagncac   360
ttacttttct gaaancngga agcagaatgc tcccaccctt gctcgatggg ccatacgtca   420
agactctgat gattaaccag ctttanatat ggacnggaaa tt                     462
```

```
<210> 169
<211> 460
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(460)
<223> n = A,T,C or G

<400> 169
ggcacgaggg acagcagacn agacagtcac agcagccttg acaaaacgtt cctggaactc    60
aagntcttnt ncncaaagga ggacagagca nacagcagag accatggant ctncctcggc   120
ccctccccac agatggtgca tcccctggca naggctcctg ctcacagcct cacttctaac   180
cttctggaac ccgcccacca ctgccaagct cactattgaa tccacgccgt tcaatgnntc   240
ntaggggaag gaggngcttt ctactnttnc acaatctgan ccccttcttn tttggttact   300
```

52

```
ancatggctc tncatgtnaa aatactggna tggntaacct gtcaaattta taggnantnt      360
gctaattggg aaactnccnn tngtctaccc caggggnccc agattcctnn gttcncataa      420
cnattaattt aacccctaat gncaanccct tngttaaaga                           460
```

```
        <210> 170
        <211> 508
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(508)
        <223> n = A,T,C or G

        <400> 170
ggcacgaggg ggatttttag gtggtcnggt gtggtatcag gaataatgtg ggaggccaga      60
ttgaagtcca ggccaggaac aatggtaatt gtgggactta agaaagtgtg agtacagctg     120
aatgagccgg ggagcagaaa gtatatgcgt caggtatgag gaagaaaata gattttggaa     180
gttatgagaa atgtagagag tgagttgagc atagtttgtg attttgaggg cctctaacag     240
tattaaagca gcggcagcgg ctgcacacag acatgatggc taggctaaaa caggaaggtc     300
aagttgtttg gacagaaagg ctacaggtg cagtcctggc tcttgtgtaa gaattctgac     360
cacactaacc atgcctagga aggaaaggag ttgttctttt gtaagggatt gaggtttggg     420
agattaatcg gacacgatca gcagggagag cacctgtgtt tttatgagaa ttatgctgag     480
ataggtaaca gatgaggatg aaatttgg                                        508
```

```
        <210> 171
        <211> 507
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(507)
        <223> n = A,T,C or G

        <400> 171
ggcacgagac cagccactag cgcagnctcg agcgatggcc tatgtccccg caccgggcta      60
ccagcccacc tacaacccga cgctgcctta ctaccagccc atcccgggcg ggctcaacgt     120
gggaatgtct gtttacatcc aaggagtggc cagcgagcac atgaagcggt tcttcgtgaa     180
ctttgtggtt gggcaggatc cgggctcaga cgtcgccttc cacttcaatc cgcggtttga     240
cggctgggac aaggtggtct tcaacacgtt gcagggcggg aagtggggca gcgaggagag     300
gaagaggagc atgcccttca aaaagggtgc cgcctttgag ctggtcttca tagtcctggc     360
tgagcactac aaggtggtgg taaatggaaa tcccttctat gagtacgggc accggcttcc     420
cctacagatg gtcacccacc tgcaagtgga tggggatctg caacttcaat caatcaactt     480
catcggaggc cagcccctcc ggcccca                                         507
```

```
        <210> 172
        <211> 409
        <212> DNA
        <213> Homo sapien

        <400> 172
ggcacgagct ggagtgtctg ctgccacccc ctcgtcctct gcagaaatgt ctgtcaccta      60
cgatgactct gtgggagtgg aagtgtccag cgacagcttc tgggaggttg ggaactacaa     120
acggactgtg aagcggattg acgatggcca ccgcctgtgt ggtgacctca tgaactgtct     180
gcatgagcgg gcacgcatcg agaaggcgta tgcacagcag ctcactgagt gggcccgacg     240
ctggaggcag ctggtagaga agggaccaca gtatgggacc gtggagaagg cctggatagc     300
tgtcatgtct gaagcagaga gggtgagtga actgcacctg gaagtgaagg catcactgat     360
```

53

```
gaatgaagac tttgagaaga tcaagaactg gcagaaggaa gcctttcac            409


        <210> 173
        <211> 409
        <212> DNA
        <213> Homo sapien

        <400> 173
ggcacgaggg cagctagagg aagagtccaa ggccaagaac gcactggccc acgccctgca     60
gtcagctcgc catgactgtg acctgctgcg ggaacagtat gaagaggagc aggaagccaa    120
ggctgagctg cagagggcca tgtccaaggc caacagcgag gtagcccagt ggaggacgaa    180
atatgagacg gatgccatcc agcgcacaga ggagctggaa gaggccaaga agaagctggc    240
tcagcgtctg caggatgctg aggaacatgt agaagctgtg aattccaaat gcgcttctct    300
tgaaaagacg aagcagcgac ttcagaatga agtggaggac ctcatgattg acgtggagag    360
gtctaatgct gcctgcgctg cgcttgataa gaagcagagg aactttgac              409


        <210> 174
        <211> 407
        <212> DNA
        <213> Homo sapien

        <400> 174
ggcacgagcc ggggcggggc gcggcgctcc ggctcgaggc attcggagct gcgggagccg     60
ggctggcagg agcaggatgg cggcggcggc ggctgcaggc gaggcgcgcc gggtgctggt    120
gtacggcggc aggggcgctc tgggttctcg atgcgtgcag gctttcgggg cccgcaactg    180
gtgggttgcc agcgttgatg tggtggagaa tgaagaggcc agcgctagca tcattgttaa    240
aatgacagac tcgttcactg agcaggctga ccaggtgact gctgaggttg gaaagctctt    300
gggtgaagag aaggtggatg caattctttg cgttgctgga ggatgggccg ggggcaatgc    360
caaatccaag tctctcttta agaactgtga cctgatgtgg aagcaga              407


        <210> 175
        <211> 407
        <212> DNA
        <213> Homo sapien

        <400> 175
ggcacgagct tgcccgtcgg tcgctagctc gctcggtgcg cgtcgtcccg ctccatggcg     60
ctcttcgtgc ggctgctggc tctcgccctg gctctggccc tgggccccgc cgcgaccctg    120
gcgggtcccg ccaagtcgcc ctaccagctg gtgctgcagc acagcaggct ccggggccgc    180
cagcacggcc ccaacgtgtg tgctgtgcag aaggttattg cactaatag gaagtacttc    240
accaactgca agcagtggta ccaaaggaaa atctgtggca aatcaacagt catcagctac    300
gagtgctgtc ctggatatga aaaggtccct ggggagaagg gctgtccagc agccctacca    360
ctctcaaacc tttacgagac cctgggagtc gttggatcca ccaccac              407


        <210> 176
        <211> 409
        <212> DNA
        <213> Homo sapien

        <400> 176
ggcacgagtg gtgccaaaac gggaccatgc cctcctggag gagcagagca agcagcagtc     60
caacgagcac ctgcgccgcc agttcgccag ccaggccaat gttgtggggc cctggatcca    120
gaccaagatg gaggagatcg ggcgcatctc cattgagatg aacgggaccc tggaggacca    180
gctgagccac ctgaagcagt atgaacgcag catcgtggac tacaagccca acctggacct    240
gctggagcag cagcaccagc tcatccagga ggccctcatc ttcgacaaca agcacaccaa    300
ctataccatg gagcacatcc gcgtgggctg ggagcagctg ctcaccacca ttgcccgcac    360
catcaacgag gtggagaacc agatcctcac ccgcgacgcc aagggcatc              409
```

54

```
<210> 177
<211> 408
<212> DNA
<213> Homo sapien

<400> 177
ggcacgaggt ccaggtaact gcaaaaacaa tggctcagca tgaagaactg atgaagaaaa      60
ctgaaacaat gaatgtagtt atggagacca ataaaatgct aagagaagag aaggagcagg     120
tttcaaaaat ggcatcagtc cgtcagcatt tggaagaaac aacacagaaa gcagaatcac     180
agttgttgga gtgtaaagca tcttgggagg aaagagagag aatgttaaag gatgaagttt     240
ccaaatgtgt atgtcgctgt gaagatctgg agaaacaaaa cagattactt catgatcaga     300
tcgaaaaatt aagtgacaag gtcgttgcct ctgtgaagga aggtgtacaa ggtccactga     360
atgtatctct cagtgaagaa ggaaaatctc aagaacaaat tttggaaa                 408


<210> 178
<211> 92
<212> DNA
<213> Homo sapien

<400> 178
ggcacgagaa gaaattaaga gctaaagaca aggagaatga aaatatggtt gcaaagctga      60
acaaaaaagt taaagagcta gaagaggaga tg                                   92


<210> 179
<211> 411
<212> DNA
<213> Homo sapien

<400> 179
ggcacgagga gacacgccac ctataccaca gttctcagaa tgaattagct aagttggaat      60
cagaacttaa gagtctcaaa gaccagttga ctgatttaag taactcttta gaaaaatgta     120
aggaacaaaa aggaaacttg gaagggatca taaggcagca agaggctgat attcaaaatt     180
ctaagttcag ttatgaacaa ctggagactg atcttcaggc ctccagagaa ctgaccagta     240
ggctgcatga agaaataaat atgaaagagc aaaagattat aagcctgctt tctggcaagg     300
aagaggcaat ccaagtagct attgctgaac tgcgtcagca acatgataaa gaaattaaag     360
agctggaaaa cctgctgtcc caggaggaag aggagaatat tgtttttagaa g             411


<210> 180
<211> 411
<212> DNA
<213> Homo sapien

<400> 180
ggcacgaggt tgttcggagc gggcgagcgg agttagcagg gctttactgc agagcgcgcc      60
gggcactcca gcgaccgtgg ggatcagcgt aggtgagctg tggccttttg cgaggtgctg     120
cagccatagc tacgtgcgtt cgctacgagg attgagcgtc tccacccatc ttctgtgctt     180
caccatctac ataatgaatc ccagtatgaa gcagaaacaa gaagaaatca aagagaatat     240
aaagactagt tctgtcccaa gaagaactct gaagatgatt cagccttctg catctggatc     300
tcttgttgga agagaaaatg agctgtccgc aggcttgtcc aaaaggaaac atcggaatga     360
ccacttaaca tctacaactt ccagccctgg ggttattgtc ccagaatcta g             411


<210> 181
<211> 411
<212> DNA
<213> Homo sapien

<400> 181
ggcacgaggc gggacagggc gaagcggcct gcgcccacgg agcgcgcgac actgcccgga      60
```

```
agggaccgcc accccttgccc cctcagctgc ccactcgtga tttccagcgg cctccgcgcg      120
cgcacgatgc cctcggccac cagccacagc gggagcggca gcaagtcgtc cggaccgcca      180
ccgccgtcgg gttcctccgg gagtgaggcg gccgcgggag ccggggccgc cgcgccggct      240
tctcagcacc ccgcaaccgg caccggcgct gtccagaccg aggccatgaa gcagattctc      300
ggggtgatcg acaagaaact tcggaacctg gagaagaaaa agggtaagct tgatgattac      360
caggaacgaa tgaacaaagg ggaaaggctt aatcaagatc agctggatgc c               411
```

```
<210> 182
<211> 411
<212> DNA
<213> Homo sapien

<400> 182
ggcacgagcc gacatggagc tgttcctcgc gggccgccgg gtgctggtca ccggggcagg      60
caaaggtata gggcgcggca cggtccaggc gctgcacgcg acgggcgcgc gggtggtggc      120
tgtgagccgg actcaggcgg atcttgacag ccttgtccgc gagtgcccgg ggatagaacc      180
cgtgtgcgtg gacctgggtg actgggaggc caccgagcgg gcgctgggca gcgtgggccc      240
cgtggacctg ctggtgaaca acgccgctgt cgccctgctg cagcccttcc tggaggtcac      300
caaggaggcc tttgacagat cctttgaggt gaacctgcgt gcggtcatcc aggtgtcgca      360
gattgtggcc aggggcttaa tagcccgggg agtcccaggg gccatcgtga a               411
```

```
<210> 183
<211> 409
<212> DNA
<213> Homo sapien

<400> 183
ggcacgagcc tacactctgg ccagagatac cacagtcaaa cctggagcca aaaaggacac      60
aaaggactct cgacccaaac tgccccagac cctctccaga ggttgggtg accaactcat       120
ctggactcag acatatgaag aagctctata taaatccaag acaagcaaca aacccttgat      180
gattattcat cacttggatg agtgcccaca cagtcaagct ttaaagaaag tgtttgctga      240
aaataaagaa atccagaaat tggcagagca gtttgtcctc ctcaatctgg tttatgaaac      300
aactgacaaa cacctttctc ctgatggcca gtatgtcccc aggattatgt ttgttgaccc      360
atctctgaca gttagagccg atatcactgg aagatattca aatcgtctc                 409
```

```
<210> 184
<211> 410
<212> DNA
<213> Homo sapien

<400> 184
ggcacgaggt cattccagca ccaacaggat ccaagccaga ttgattgggc tgcattggcc      60
caagcttgga ttgcccaaag agaagcttca ggacagcaaa gcatggtaga acaaccacca      120
ggaatgatgc caaatggaca agatatgtct acaatggaat ctggtccaaa caatcatggg      180
aatttccaag gggattcaaa cttcaacaga atgtggcaac cagaatgggg aatgcatcag      240
caaccccac acccccctcc agatcagcca tggatgccac caacaccagg cccaatggac      300
attgttcctc cttctgaaga cagcaacagt caggacagtg gggaatttgc ccctgacaac      360
aggcatatat ttaaccagaa caatcacaac tttggtggac cacccgataa                 410
```

```
<210> 185
<211> 411
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = A,T,C or G
```

56

<400> 185
ggcacgagca cagatgtagt tttctctgcg cgtgtgcgtt ttccctcctc ccccgccctc   60
agggtccacg gccaccatgg cgtattaggg gcagcagtgc ctgcggcagc attggccttt   120
gcagcggcgg cagcagcacc aggctctgca gcggcaaccc ccagcggctt aagccatggc   180
gcttctcacg gcattcagca gcagcgttgc tgtaaccgac aaagacacct tcgaattaag   240
cacattcctc gattccagca aagcaccgca acatgaccga aatgagcttc ctgagcagcg   300
aggtgttggt gggggacttg atgtccccct tcgacccgtc gggtttgggg gctgaagaaa   360
gcctangtct cttagatgat tacctggagg tggccaagca cttcaaacct c   411

        <210> 186
        <211> 410
        <212> DNA
        <213> Homo sapien

        <400> 186
ggcacgagct tctagtcccg ccatggccgc tctcacccgg accccccagt tccagaagct   60
gcagcaatgg taccgcgagc accgctccga gctgaacctg cgccgcctct tcgatgccaa   120
caaggaccgc ttcaaccact tcagcttgac cctcaacacc aaccatgggc atatcctggt   180
ggattactcc aagaacctgg tgacggagga cgtgatgcgg atgctggtgg acttggccaa   240
gtccaggggc gtggaggccg cccgggagcg gatgttcaat ggtgagaaga tcaactacac   300
cgagggtcga gccgtgctgc acgtggctct gcggaaccgg tcaaacacac ccatcctggt   360
agacggcaag gatgtgatgc cagaggtcaa caaggttctg gacaagatga   410

        <210> 187
        <211> 506
        <212> DNA
        <213> Homo sapien

        <400> 187
ctttcgtggc tcactccctt tcctctgctg ccgctcggtc acgcttgtgc ccgaaggagg   60
aaacagtgac agacctggag actgcagttc tctatccttc acacagctct ttcaccatgc   120
ctggatcact tcctttgaat gcagaagctt gctggccaaa agatgtggga attgttgccc   180
ttgagatcta tttttccttct caatatgttg atcaagcaga gttggaaaaa tatgatggtg   240
tagatgctgg aaagtatacc attggcttgg gccaggccaa gatgggcttc tgcacagata   300
gagaagatat taactctctt tgcatgactg tggttcagaa tcttatggag agaaataacc   360
tttcctatga ttgcattggg cggctggaag ttggaacaga gacaatcatc gacaaatcaa   420
agtctgtgaa gactaatttg atgcagctgt ttgaagagtc tgggaataca gatatagaag   480
gaatcgacac aactaatgca tgctat   506

        <210> 188
        <211> 506
        <212> DNA
        <213> Homo sapien

        <400> 188
gccacagagg cggcggagag atggccttca gcggttccca ggctccctac ctgagtccag   60
ctgtcccctt ttctgggact attcaaggag gtctccagga cggacttcag atcactgtca   120
atgggaccgt tctcagctcc agtggaacca ggtttgctgt gaactttcag actggcttca   180
gtggaaatga cattgccttc cacttcaacc ctcggtttga agatggaggg tacgtggtgt   240
gcaacacgag gcagaacgga agctgggggc ccgaggagag gaagacacac atgcctttcc   300
agaaggggat gccctttgac ctctgcttcc tggtgcagag ctcagatttc aaggtgatgg   360
tgaacgggat cctcttcgtg cagtacttcc accgcgtgcc cttccaccgt gtggacacca   420
tctccgtcaa tggctctgtg cagctgtcct acatcagctt ccagcctccc ggcgtgtggc   480
ctgccaaccc ggctcccatt acccag   506

        <210> 189
        <211> 399

57

```
        <212> DNA
        <213> Homo sapien

        <400> 189
ctggacagga  gaagagcctg  gctgctgaag  gcagggctga  cacgaccacg  ggcagcattg        60
ctggagcccc  agaggatgaa  agatcgcaga  gcacagcccc  ccaggcacca  gagtgcttcg       120
accctgccgg  accggctggg  ctcgtgaggc  cgacatctgg  cctttcccag  ggcccaggaa       180
aggaaacctt  ggaaagtgct  ctaatcgctc  tagactctga  aaaacccaag  aaacttcgct       240
tccacccaaa  gcagctgtac  ttctctgcca  ggcagggtga  gctgcagaag  gtgcttctca       300
tgctggttga  tggaattgat  cccaacttca  aaatggagca  ccaaagtaag  cgttccccat       360
tacatgctgc  tgcggaggct  ggccacgtgg  acatctgcc                                399

        <210> 190
        <211> 401
        <212> DNA
        <213> Homo sapien

        <400> 190
cggcgacggt  ggtggtgact  gagcggagcc  cggtgacagg  atgttggtgt  tggtattagg        60
agatctgcac  atcccacacc  ggtgcaacag  tttgccagct  aaattcaaaa  aactcctggt       120
gccaggaaaa  attcagcaca  ttctctgcac  aggaaacctt  tgcaccaaag  agagttatga       180
ctatctcaag  actctggctg  gtgatgttca  tattgtgaga  ggagacttcg  atgagaatct       240
gaattatcca  gaacagaaag  ttgtgactgt  tggacagttc  aaaattggtc  tgatccatgg       300
acatcaagtt  attccatggg  gagatatggc  cagcttagcc  ctgttgcaga  ggcaatttga       360
tgtggacatt  cttatctcgg  gacacacaca  caaatttgaa  g                           401

        <210> 191
        <211> 406
        <212> DNA
        <213> Homo sapien

        <400> 191
tggcagccta  agccgtggga  gggttccagt  cgagaatggg  aagatgaaag  acttcagatg        60
gaacagaaat  aaatgccttt  tttgacaaac  gcagcagtgc  gtgcctctag  cttgcaagag       120
cgttactccc  cttcatagct  ttaaaaggtt  ttcgcactgc  gtgcagttag  agtagctaaa       180
tcttgtgtga  cgctccacaa  acacttgtaa  gaattttgca  gagaaagata  accgttgcca       240
cccaatgccc  cccacaggca  ttctactccc  cagtacctct  tagggtggga  gaaatggtga       300
agagttgttc  ctacaacttg  ctaacctagt  ggacagggta  gtagattagc  atcatccgga       360
tagatgtgaa  gaggacggct  gtttggataa  taattaagga  taaaat                      406

        <210> 192
        <211> 316
        <212> DNA
        <213> Homo sapien

        <400> 192
cccggggagg  ccctggtcat  aaaactttaa  attttactag  tgttacttaa  tgtatattct        60
aaaaagagaa  tgcagtaact  aatgccctaa  atgtttgatc  tctgtttgtc  attacttttt       120
caaaattatt  tttttctgta  aagtataata  tataaaactt  cttgcttaaa  ttgaatttct       180
atattagtgg  ttaattgcag  tttattaaag  ggatcattat  cagtaatttc  atagcaactg       240
ttctagtgtt  ttgtgttttt  aaaacagaat  taggaatttg  agatatctga  ttatattttt       300
catatgaatc  acagac                                                          316

        <210> 193
        <211> 146
        <212> DNA
        <213> Homo sapien
```

58

```
    <400> 193
gaaacatgga ctgcccctta aattttgact gtcctaaaaa cctatttctg atttataata        60
tgctgcctga taaagtgaca ctagatgtac cagctgagtg tttaatcttc ccatcacaga       120
tcagatttga gcattaacag gtattt                                            146


    <210> 194
    <211> 405
    <212> DNA
    <213> Homo sapien


    <400> 194
cggatgtgct cactgacatt ctactccaag tcggagatgc agatccactc caagtcacac        60
accgagacca agccccacaa gtgcccacat tgctccaaga ccttcgccaa cagctcctac       120
ctggcccagc acatccgtat acactcaggg gctaagccct acagttgtaa cttctgtgag       180
aaatccttcc gccagctctc ccaccttcag cagcacaccc gaatccacac tggtgataga       240
ccatacaaat gtgcacaccc aggctgtgag aaagccttca cacaactctc caatctgcag       300
tcccacagac ggcaacacaa caaagataaa cccttcaagt gccacaactg tcatcgggcg       360
tacacggatg cagcctcact agaggtgcac ctgtctacgc acaca                      405


    <210> 195
    <211> 421
    <212> DNA
    <213> Homo sapien


    <400> 195
agaattcggc acgagctact ccttgcgcgc tggcactccg cagcctttaa ggttcgcgcg        60
ggggccaggc aagagttagc catgaagagc ctcaagtccc gcctgaggag gcaggacgtg       120
cccggccccg cgtcgtctgg cgccgccgcc gccagcgcgc atgcagcaga ttggaataaa       180
tatgatgacc gattgatgaa agcagcagaa agggggggatg tagaaaaagt gacgtcaatc      240
cttgctaaaa aggggggtcaa tccaggcaaa ctagatgtgg aaggcagatc tgtcttccat      300
gttgtgacct caaagggaa tcttgagtgt ttgaatgcca tccttataca tggagttgat       360
attacaacca gtgacactgc agggagaaat gctcttcacc tggctgctaa gtatggacat       420
g                                                                       421


    <210> 196
    <211> 476
    <212> DNA
    <213> Homo sapien


    <400> 196
agaattgatc tatagattta atgcaatgcc tactaaaatc ccagtacgat tttttacagg        60
catagacaat agacatagcc aaaacttatt ctaaaataca tatgaagatg cacagcccct       120
agttatacaa tcttgacaaa gaagaataaa gtgggaagaa tctatttgat tttaaggctt       180
accatgtaac tacagtcatc aagagagtgt ggtatcggca gacggtcaga catacagatc       240
aatggaatgt aacagaggac ccagaaatag gcccacacag atatgctcaa tggatatttg       300
acaagcgtgc aaaacaattc aatggaagaa taagctttca aaaaaatggc gttggagcaa       360
ccggacatcc ataggaaaaa atgaacccat acctaaacca taaaccttat ataaaaataa       420
acacaaaatg aatcataggc ttaaatgtaa gctataaaac ttttagagaa aaacac          476


    <210> 197
    <211> 503
    <212> DNA
    <213> Homo sapien


    <400> 197
tagccctcgg tgaagcccca gaccacagct atgagtccct tcgtgtgacg tctgcgcaga        60
aacatgttct gcatgtccag ctcaaccggc ccaacaagag gaatgccatg aacaaggtct       120
tctggagaga gatggtagag tgcttcaaca agatttcgag agacgctgac tgtcgggcgg       180
```

59

```
tggtgatctc tggtgcagga aaaatgttca ctgcaggtat tgacctgatg gacatggctt    240
cggacatcct gcagcccaaa ggagatgatg tggcccggat cagctggtac ctccgtgaca    300
tcatcactcg ataccaggag accttcaacg tcatcgagag gtgccccaag cccgtgattg    360
ctgccgtcca tgggggctgc attggcggag gtgtggacct tgtcaccgcc tgtgacatcc    420
ggtactgtgc ccaggatgct ttcttccagg tgaaggaggt ggacgtgggt ttggctgccc    480
atgtaggaac actgcagcgc ctg                                            503
```

```
        <210> 198
        <211> 168
        <212> PRT
        <213> Homo sapien
```

```
      <400> 198
Phe Val Ala His Ser Leu Ser Ser Ala Ala Ala Arg Ser Arg Leu Cys
1               5                   10                  15
Pro Lys Glu Glu Thr Val Thr Asp Leu Glu Thr Ala Val Leu Tyr Pro
            20                  25                  30
Ser His Ser Ser Phe Thr Met Pro Gly Ser Leu Pro Leu Asn Ala Glu
        35                  40                  45
Ala Cys Trp Pro Lys Asp Val Gly Ile Val Ala Leu Glu Ile Tyr Phe
    50                  55                  60
Pro Ser Gln Tyr Val Asp Gln Ala Glu Leu Glu Lys Tyr Asp Gly Val
65                  70                  75                  80
Asp Ala Gly Lys Tyr Thr Ile Gly Leu Gly Gln Ala Lys Met Gly Phe
                85                  90                  95
Cys Thr Asp Arg Glu Asp Ile Asn Ser Leu Cys Met Thr Val Val Gln
            100                 105                 110
Asn Leu Met Glu Arg Asn Asn Leu Ser Tyr Asp Cys Ile Gly Arg Leu
        115                 120                 125
Glu Val Gly Thr Glu Thr Ile Ile Asp Lys Ser Lys Ser Val Lys Thr
    130                 135                 140
Asn Leu Met Gln Leu Phe Glu Glu Ser Gly Asn Thr Asp Ile Glu Gly
145                 150                 155                 160
Ile Asp Thr Thr Asn Ala Cys Tyr
                165
```

```
        <210> 199
        <211> 168
        <212> PRT
        <213> Homo sapien
```

```
      <400> 199
His Arg Gly Gly Gly Glu Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr
1               5                   10                  15
Leu Ser Pro Ala Val Pro Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln
            20                  25                  30
Asp Gly Leu Gln Ile Thr Val Asn Gly Thr Val Leu Ser Ser Ser Gly
        35                  40                  45
Thr Arg Phe Ala Val Asn Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile
    50                  55                  60
Ala Phe His Phe Asn Pro Arg Phe Glu Asp Gly Gly Tyr Val Val Cys
65                  70                  75                  80
Asn Thr Arg Gln Asn Gly Ser Trp Gly Pro Glu Glu Arg Lys Thr His
                85                  90                  95
Met Pro Phe Gln Lys Gly Met Pro Phe Asp Leu Cys Phe Leu Val Gln
            100                 105                 110
Ser Ser Asp Phe Lys Val Met Val Asn Gly Ile Leu Phe Val Gln Tyr
        115                 120                 125
```

```
Phe His Arg Val Pro Phe His Arg Val Asp Thr Ile Ser Val Asn Gly
    130                 135             140
Ser Val Gln Leu Ser Tyr Ile Ser Phe Gln Pro Pro Gly Val Trp Pro
145                 150             155             160
Ala Asn Pro Ala Pro Ile Thr Gln
                165
```

```
        <210> 200
        <211> 132
        <212> PRT
        <213> Homo sapien


        <400> 200
Gly Gln Glu Lys Ser Leu Ala Ala Glu Gly Arg Ala Asp Thr Thr Thr
1               5               10              15
Gly Ser Ile Ala Gly Ala Pro Glu Asp Glu Arg Ser Gln Ser Thr Ala
            20              25              30
Pro Gln Ala Pro Glu Cys Phe Asp Pro Ala Gly Pro Ala Gly Leu Val
        35              40              45
Arg Pro Thr Ser Gly Leu Ser Gln Gly Pro Gly Lys Glu Thr Leu Glu
    50              55              60
Ser Ala Leu Ile Ala Leu Asp Ser Glu Lys Pro Lys Lys Leu Arg Phe
65              70              75              80
His Pro Lys Gln Leu Tyr Phe Ser Ala Arg Gln Gly Glu Leu Gln Lys
            85              90              95
Val Leu Leu Met Leu Val Asp Gly Ile Asp Pro Asn Phe Lys Met Glu
            100             105             110
His Gln Ser Lys Arg Ser Pro Leu His Ala Ala Ala Glu Ala Gly His
        115             120             125
Val Asp Ile Cys
130
```

```
        <210> 201
        <211> 120
        <212> PRT
        <213> Homo sapien


        <400> 201
Met Leu Val Leu Val Leu Gly Asp Leu His Ile Pro His Arg Cys Asn
1               5               10              15
Ser Leu Pro Ala Lys Phe Lys Lys Leu Leu Val Pro Gly Lys Ile Gln
            20              25              30
His Ile Leu Cys Thr Gly Asn Leu Cys Thr Lys Glu Ser Tyr Asp Tyr
            35              40              45
Leu Lys Thr Leu Ala Gly Asp Val His Ile Val Arg Gly Asp Phe Asp
    50              55              60
Glu Asn Leu Asn Tyr Pro Glu Gln Lys Val Val Thr Val Gly Gln Phe
65              70              75              80
Lys Ile Gly Leu Ile His Gly His Gln Val Ile Pro Trp Gly Asp Met
            85              90              95
Ala Ser Leu Ala Leu Leu Gln Arg Gln Phe Asp Val Asp Ile Leu Ile
            100             105             110
Ser Gly His Thr His Lys Phe Glu
        115             120
```

```
        <210> 202
        <211> 135
        <212> PRT
```

<213> Homo sapien

<400> 202

Arg	Met	Cys	Ser	Leu	Thr	Phe	Tyr	Ser	Lys	Ser	Glu	Met	Gln	Ile	His
1				5					10					15

```
Arg Met Cys Ser Leu Thr Phe Tyr Ser Lys Ser Glu Met Gln Ile His
1               5                   10                  15
Ser Lys Ser His Thr Glu Thr Lys Pro His Lys Cys Pro His Cys Ser
        20                  25                  30
Lys Thr Phe Ala Asn Ser Ser Tyr Leu Ala Gln His Ile Arg Ile His
        35                  40                  45
Ser Gly Ala Lys Pro Tyr Ser Cys Asn Phe Cys Glu Lys Ser Phe Arg
    50                  55                  60
Gln Leu Ser His Leu Gln Gln His Thr Arg Ile His Thr Gly Asp Arg
65                  70                  75                  80
Pro Tyr Lys Cys Ala His Pro Gly Cys Glu Lys Ala Phe Thr Gln Leu
            85                  90                  95
Ser Asn Leu Gln Ser His Arg Arg Gln His Asn Lys Asp Lys Pro Phe
            100                 105                 110
Lys Cys His Asn Cys His Arg Ala Tyr Thr Asp Ala Ala Ser Leu Glu
            115                 120                 125
Val His Leu Ser Thr His Thr
    130                 135
```

<210> 203
<211> 135
<212> PRT
<213> Homo sapien

<400> 203

```
Leu Leu Leu Ala Arg Trp His Ser Ala Ala Phe Lys Val Arg Ala Gly
1               5                   10                  15
Ala Arg Gln Glu Leu Ala Met Lys Ser Leu Lys Ser Arg Leu Arg Arg
        20                  25                  30
Gln Asp Val Pro Gly Pro Ala Ser Ser Gly Ala Ala Ala Ala Ser Ala
        35                  40                  45
His Ala Ala Asp Trp Asn Lys Tyr Asp Asp Arg Leu Met Lys Ala Ala
    50                  55                  60
Glu Arg Gly Asp Val Glu Lys Val Thr Ser Ile Leu Ala Lys Lys Gly
65                  70                  75                  80
Val Asn Pro Gly Lys Leu Asp Val Glu Gly Arg Ser Val Phe His Val
            85                  90                  95
Val Thr Ser Lys Gly Asn Leu Glu Cys Leu Asn Ala Ile Leu Ile His
            100                 105                 110
Gly Val Asp Ile Thr Thr Ser Asp Thr Ala Gly Arg Asn Ala Leu His
            115                 120                 125
Leu Ala Ala Lys Tyr Gly His
    130                 135
```

<210> 204
<211> 167
<212> PRT
<213> Homo sapien

<400> 204

```
Ala Leu Gly Glu Ala Pro Asp His Ser Tyr Glu Ser Leu Arg Val Thr
1               5                   10                  15
Ser Ala Gln Lys His Val Leu His Val Gln Leu Asn Arg Pro Asn Lys
        20                  25                  30
Arg Asn Ala Met Asn Lys Val Phe Trp Arg Glu Met Val Glu Cys Phe
```

```
                    35                    40                    45
Asn Lys Ile Ser Arg Asp Ala Asp Cys Arg Ala Val Val Ile Ser Gly
        50                    55                    60
Ala Gly Lys Met Phe Thr Ala Gly Ile Asp Leu Met Asp Met Ala Ser
65                    70                    75                    80
Asp Ile Leu Gln Pro Lys Gly Asp Asp Val Ala Arg Ile Ser Trp Tyr
                    85                    90                    95
Leu Arg Asp Ile Ile Thr Arg Tyr Gln Glu Thr Phe Asn Val Ile Glu
                100                   105                   110
Arg Cys Pro Lys Pro Val Ile Ala Ala Val His Gly Gly Cys Ile Gly
            115                   120                   125
Gly Gly Val Asp Leu Val Thr Ala Cys Asp Ile Arg Tyr Cys Ala Gln
        130                   135                   140
Asp Ala Phe Phe Gln Val Lys Glu Val Asp Val Gly Leu Ala Ala His
145                   150                   155                   160
Val Gly Thr Leu Gln Arg Leu
                165
```

```
        <210> 205
        <211> 381
        <212> DNA
        <213> Homo sapien

        <400> 205
aaatttggga tcatcgcctg ttctgaaaac tagatgcacc aaccgtatca ttatttgttt        60
gaggaaaaaa agaaatctgc attttaattc atgttggtca aagtcgaatt actatctatt       120
tatcttatat cgtagatctg ataaccctat ctaaaagaaa gtcacacgct aaatgtattc       180
ttacatagtg cttgtatcgt tgcatttgtt ttaatttgtg gaaaagtatt gtatctaact       240
tgtattactt tggtagtttc atctttatgt attattgata tttgtaattt tctcaactat       300
aacaatgtag ttacgctaca acttgcctaa aacattcaaa cttgttttct tttttctgtt       360
gttttctttg ttaattcatt t                                                 381

        <210> 206
        <211> 514
        <212> DNA
        <213> Homo sapien

        <400> 206
aaaagtaaat tgcataaaat tacatccaat ttctttctct aaaccaacat attcttcacc        60
ttcacaaagc aaacacatgg tgcactgaaa ccgaggtgtt accagcttta catactgttc       120
tgccatttgt gggggtgtgca accacaacat aagtcagaaa aaaagctatc cagcttttcg       180
tggaatctgg tgaagtttac acttagcgat aagcctctaa gcctgaactt agcagggcta       240
gcaaaacttt atttatttcc taactcctat tattttagaa tggttttcaa aataatactg       300
caagttccta attgaaatac aaaacagaac aaaaagctgt gagaaatctt ttttttttctt      360
tggctcctta aagacttgga ataatttata ttagtgttgc atacatttta ccttctacat       420
tttgatgtac ttgctcttga aagcactaga acaaattaat tgaaataaaa cctctctgaa       ·480
accatttgaa tctttgatcc taccatagag tttt                                   514

        <210> 207
        <211> 522
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(522)
        <223> n = A,T,C or G
```

63

```
      <400> 207
caagctttg  gtgcatagca  gccngcctgg  aagcattctg  agtgctctgt  ctgccctggt      60
gggtttcatt  atcctgtctg  tcaaacaggc  caccttaaat  cctgcctcac  tgcagtgtga     120
gttggacaaa  aataatatac  caacaagaag  ttatgtttct  tactttatc   atgattcact     180
ttataccacg  gactgctata  cagccaaagc  cagtctggct  ggaactctct  ctctgatgct     240
gatttgcact  ctgctggaat  tctgcctagc  tgtgctcact  gctgtgctgc  ggtggaaaca     300
ggcttactct  gacttccctg  ggagtgtact  tttcctgcct  cacagttaca  ttggtaattc     360
tggcatgtcc  tcaaaaatga  ctcatgactg  tggatatgaa  gaactattga  cttcttaaga     420
aaaaagggag  aaatattaat  cagaaagttg  attcttatga  taatatggaa  aagttaacca     480
ttatagaaaa  gcaaagcttg  agtttcctaa  atgtaagctt  tt                         522


      <210> 208
      <211> 278
      <212> DNA
      <213> Homo sapien

      <400> 208
aaaatgcact  acccctttt   tccaacacgg  agcttaaaac  aaattaatga  aagagtggaa      60
aattcaaaat  aagggcaaga  gataaggttt  ttttttttt   tcctttaaga  tagactcagg     120
ataggtagat  agctttcact  gatgtagatg  tggaataaat  tattacttca  ggaaaaaaat     180
tcccaaacat  cttatgaaaa  agtatacaac  tctacttcaa  aatatgctat  ttactcactg     240
ccaaagacag  ttttatttga  aatcttgttt  ctgtattt                               278


      <210> 209
      <211> 234
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(234)
      <223> n = A,T,C or G

      <400> 209
cctcccaaat  ttagcaggtg  ctgggnagga  ccctagggag  tggtttatgg  gggctagctg      60
gtgaaactgc  cctttccttt  ctgttctatg  agtgtgatgg  tgtttgagaa  aatgtggggc     120
tatggttcag  gcgcacttca  catgtgcaaa  gatggagaaa  gcactcacct  acacgtttag     180
gctcagaatg  ttgattgaaa  cattttgaat  gatcaaaaat  aaaatgttat  tttt           234


      <210> 210
      <211> 186
      <212> DNA
      <213> Homo sapien

      <220>
      <221> misc_feature
      <222> (1)...(186)
      <223> n = A,T,C or G

      <400> 210
aaaataactg  atggcaaaat  aaaanattta  catcacatca  tactgtgtaa  acatgtaagg      60
tctctgtaca  aagaaatata  catgcaaaat  aatgtaaaaa  tttaactgaa  ataataaaag     120
aaacaataca  caaataaaaa  ttatgaggtt  acgaatacac  atccagtttc  gaatccaatt     180
tctttt                                                                     186


      <210> 211
      <211> 403
      <212> DNA
```

64

```
<213> Homo sapien

<400> 211
aaaaattggt aaaatattta agtacaaaat aagtagcttc cagcgaggtt tttataccat      60
agtaagagca cacaatagat attactagca cacatggggtt atctgggagc gctatagcta    120
caataaacct aattatggaa cagaaatttg cattctgttt ccagtgctac tacactccta    180
ctttctcaaa agtctgctct attaatatca gctcagtgca gtttactatg aatagtttat    240
gtctgtgatg caaagcatta attgttctct ttttacaaac atacattttt ttcataagga    300
agactggggg aaaacccaga aacatacaga gaaaaggaaa gcatcatcaa atatatgtta    360
aaaattaaga tgatgtttac tactagtcat cctacaacaa ttt                      403

<210> 212
<211> 345
<212> DNA
<213> Homo sapien

<400> 212
cctctttatg agttcattac tgctgttcag tctcggcaca cagacacccc tgtgcaccgg     60
ggtgtacttt ctactctgat cgctgggcct gtggttgaga taagtcacca gctacggaag    120
gtttctgacg tagaagagct taccccctcca gagcatcttt ctgatcttcc accattttca   180
aggtgtttaa taggaataat aataaagtct tcgaatgtgg tcaggtcatt tttggatgaa    240
ttaaaggcat gtgtggcttc taatgatatt gaaggcattg tgtgcctcac ggctgctgtg    300
catattatcc tggttattaa tgcaggtaaa cataaaagct caaaa                    345

<210> 213
<211> 318
<212> DNA
<213> Homo sapien

<400> 213
aaaatgtttt attattttga aaataatgtt gtaattcatg ccagggactg acaaaagact      60
tgagacagga tggttattct tgtcagctaa ggtcacattg tgccttttg accttttctt     120
cctggactat tgaaatcaag cttattggat taagtgatat ttctatagcg attgaaaggg    180
caatagttaa agtaatgagc atgatgagag tttctgttaa tcatgtatta aaactgattt    240
ttagctttac aaatatgtca gtttgcagtt atgcagaatc caaagtaaat gtcctgctag    300
ctagttaagg attgtttt                                                  318

<210> 214
<211> 462
<212> DNA
<213> Homo sapien

<400> 214
aaacacatct ggttctggca gcaagttata ttatgcattt agagcaatag gtgccctgaa      60
agttattgtt gctttttttg tttttttttt cagtttgtgc gtgtcacttg aatcagaaac    120
caaacacatg taaaaaaata tcatcctcaa tgccccccat taactctctc tccagaaggt    180
gacaatgtta gtgaactcaa gactctcact gatgatggta ttttacaatg aaaacacaag    240
gaaacccttt gaggtccaat tttcacatca tattctccaa atagtaaaat agcagctcta    300
catgttgatg aaaagaaatt tcaatttctt cctatttgtt tttactcata tcaacattaa    360
tatgtatctg gatttattaa tttccaaaaa gaaaattta gttaccaaat atttcagaaa     420
tttaataaag cattatatat atgtaattag cacttatcta cc                      462

<210> 215
<211> 280
<212> DNA
<213> Homo sapien

<400> 215
```

65

```
aaacttttct gaaacgatta gctgtagcca aattatgtgg ttacgttttg ctacattaga        60
atttgaaaat gcaatatgtg tggtaaatct actgtttgaa atttataatg gtctctgata       120
tgattcgaat tttggtaact tttgaaagtt attttccccc tttagtcatg gatttctatt       180
tgttttttaa tgttaatttt tctagaaagc atctgaattg actaggcttt tcctatataa       240
aaaactcaaa acttgttaac tctgtacttt aataaaattt                             280
```

        <210> 216
        <211> 210
        <212> DNA
        <213> Homo sapien

        <400> 216
```
aaaatctctg gcttcaaagt ttcttgggga aaggtcggtt tacctcacat ttttgtttc        60
cattagtaat attctaggta cctcacaaaa tgtattatgg tgccatggct gttagttttt       120
agtgagtgct gtaggattaa ttcgaaaata ggcagaattc cattcctccc aaggtggcaa       180
aaattagcta tactgatgta attgtcattt                                        210
```

        <210> 217
        <211> 398
        <212> DNA
        <213> Homo sapien

        <400> 217
```
ctggagctgc tagaacttga gatgagggca agagcgatta aagccctaat gaaagctggt        60
gatataaaaa agccagccta ggtatttaac ttgattttga attttaggta tgtttgaaca       120
aagccacatc atttaatttt gtatctaaaa tttatttggg gtcttatatg ttatttctca       180
tgtaacccctt attaggactc attttagccc taaattacct gtggctgttt cttttttattt    240
ttttgactac ttttatatta taaatgtgtg ttactgtctt atgaattcat ggcaatatag       300
ttggatagcc tggatacttt gttagatgag tatttagctg tgtctgcaaa tcttaaaagc       360
cattagcaaa gagtcgtggt attttttct ttattttt                                398
```

        <210> 218
        <211> 487
        <212> DNA
        <213> Homo sapien

        <400> 218
```
ctgccgccgg tcaggctggt taaagatcag gtcccccagg accttgcgat ttatgtcgcc        60
attctccagc aagacctcag tgccgaagac ctctacgatg cgccggtggg cagggtatcc       120
tggctgcacg acgtgccggg ccatcacgtc cacgtcaatc accgcacagc ccagtttcag       180
tgttttaca cattatattg ttataatctc acaataacta taaattaggt agaacaggaa        240
atgaggtttg gagaagatac ttgacttatc cgaccatctg tacttgtccc atagtaagga       300
gcctcaagca gagacaaagg aggaagttgc ctatgttgta tggtttacag gccataaatg       360
aatgtcatct tttttcctccc ctggggaaaa atgtctcaaa aatcccacca taggacatga       420
catctccaga acctctatta caaaatacac atttcctgta gaggggtaac aaatttgggt       480
taacctg                                                                 487
```

        <210> 219
        <211> 390
        <212> DNA
        <213> Homo sapien

        <400> 219
```
aaaaaataca ccacacgata caactcaata caggagtatt tcttctcaaa ttcttctagc        60
accatcaaca ttcttcaagt atctgaaata ctattaatta gcacctttgt attatgaaca       120
aaacaaaaca aggacctcag ttcatctctg tctaggtcag cacctaacaa tgtggatcac       180
actcatggga aagtgttttg aggtagttta aacctttgga agtttgggtt ttaaacttcc       240
ctctgtggaa gatattcaaa agccacaagt ggtgcaaatg tttatggttt ttattttttca      300
```

```
atttttattt tggttttctt acaaaggttg acattttcca taacaggtgt aagagtgttg      360
aaaaaaaagt tcaaattttt gggggagcgg                                        390
```

```
        <210> 220
        <211> 341
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(341)
        <223> n = A,T,C or G

        <400> 220
aaaacaggca aagttttaca gagaggatac atttaataaa actgcgagga catcaaagtg       60
gtaaatactg tgaaatacct tttctnnnca aaaggcaaat attgaagttg tttatcaact      120
tcgctagaaa aaaaaaaaca cttggcatac aaaatattta agtgaaggag aagtctaacg      180
ctgaactnnn aatgaaggga aattgtttat gtgttatgaa catccaagtc tttcttcttt      240
tttaagttgt caaagaagct tccacaaaat tagaaaggac aacagttctg agctgtaatt      300
tcgccttaaa ctctggacac tctatatgta gtgcattttt a                          341
```

```
        <210> 221
        <211> 234
        <212> DNA
        <213> Homo sapien

        <400> 221
ccaggggggaa ttgagggagg ctctaagcta ggggcactgc atggtgggac aggatggccc      60
cttgaggact gaaccctggg gagaagacaa acagtaataa taaaaacaaa taacaagtac      120
tttaagaatg gattgtatga cctatagtga cagatgacat cactaatact gaaagcttct      180
tatattaata attttggcaa aatgtcattt tgtaatatag tatatgcttt ccag            234
```

```
        <210> 222
        <211> 186
        <212> DNA
        <213> Homo sapien

        <400> 222
aaattttcat tgagttgtcc atctccagca tatagggctt caggagcaga gcagaccttg       60
tttttagtgg ttccatggga taaaatggga ttggaggagc tagaagaatt cagggtctgg      120
tccaatctgc cagtcttcct gaaatatcga aaatacacca gggctgctat atcagagcca      180
ccctgg                                                                  186
```

```
        <210> 223
        <211> 486
        <212> DNA
        <213> Homo sapien

        <400> 223
ccataagcag ataagtagca gttcaactgg atgtctctct tctccaaatg ctacagtaca       60
aagccctaag catgagtgga aaatcgttgc ttcagaaaag acttcaaata acacttactt      120
gtgcctggct gtgctggatg gtatattctg tgtcattttt cttcatggga gaaacagccc      180
acagagctca ccaacaagta ctccaaaact aagtaagagt ttaagctttg agatgcaaca      240
agatgagcta atcgaaaagc ccatgtctcc tatgcagtac gcacgatctg gtctgggaac      300
agcagagatg aatggcaaac tcatagctgc aggtggctat aacagagagg aatgtcttcg      360
aacagtcgaa tgctataatc cacatacaga tcactggtcc tttcttgctc ccatgagaac      420
accaagagcc cgatttcaaa tggctgtact catgggccag ctctatgtgg taggtggatc      480
aaatgg                                                                  486
```

67

```
<210> 224
<211> 322
<212> DNA
<213> Homo sapien

<400> 224
aaatgttcac tatgtcattt agtgtccaac tttacggata ggttgactat ctaaataggc        60
atttttagtc attaaaaaaa aatctagtca ccaggaggat ccctataact caaaataact      120
tgtttgtaaa agaaaatttg tttacttacc cattagtaag ttcctgcata ttcattataa      180
gatggcaaat caaacttttc taggatgaag acagcttatt tttaagttgt atagtcttag      240
ttggtttagg gtctcaattt taattaataa aatacttggt ttttatttgc ttgtcctttt      300
gaattcctgt tttaataatt tt                                               322

<210> 225
<211> 489
<212> DNA
<213> Homo sapien

<400> 225
aaatgtagga ataaaatggc tggcatctaa gcactttagt aaaagaggtt tttacaaata        60
actaaggatt gtagagcttc cttctctttt tttttctttt tctttcttttt gttttacatg      120
aactcaactt attcctaaca tttgtctacc tcaaagaaat ttcaagatta tttagataac      180
atggatatgt gccaaatcct ttgagctgtt aagatgataa tttcctgctt tcctcctaca      240
tcttctcctc ccactccctc ctttggtgtg aatattggct tcccaattaa gacctttttt      300
ttttttttcc agtttgtttt agcttattat aggttttgga ggaactttgc cattttgtaa      360
tctttcaaat cattcttcac ccttcctcac atcagcttcc tgcttttccc agtgtttttac     420
tgtaaattgt gtagcatatg acaaatcttg agctgacttt cctcttcact gatgtcatct      480
tgagctctt                                                             489

<210> 226
<211> 398
<212> DNA
<213> Homo sapien

<400> 226
caagggccca ccgcagagca cacctatgct atggggagcc ctgctggcag ccccgagagc        60
catgccatgg cctgcaggag ccaggctcct gtgtggatga agtccctctt cctctgtgcc      120
ttgatccctt gggggtgcct ttggtcatct cttctgtcct ttcctgtctc tgaaatagtc      180
atcactcccc ttgactctct ctgttcacgt cttctcagtc tgcagagtta acttctgtaa      240
ggagtttaat ctggggttcc aagaaaacaa gttccttgtt aacatagcac tgactttgca      300
acaatagaaa actaacaaat gagcaacaat ataaagagta gaggtagttc tcattgggtg      360
taacttcaac ccattctgct tgtggttaga atttataa                             398

<210> 227
<211> 535
<212> DNA
<213> Homo sapien

<400> 227
ctgctgcata gaaaatatgc taacatacaa cagtcaagtt taagcctgtg catagagaag        60
ataaagcact tatggtaact gcaaatggta acgagtcctt aaggtttgta caacctagta      120
tgggtccata aggaaaaact gtagtagaaa tggttaggac aaacaataaa gtagaaacag      180
gggggaaact tgagaagaga agaaagaagc aagaaaaaaa gactttcaat tgtataaaat      240
tcacaaacca gtaaagtata aagacaccat ggagaaatgg ttaactctgc cccaaacacc      300
caacagcaaa caaaaccaga atgaataagc ctttggcaga caattttaga aatttgaatg      360
ttacatttct caataattca caaacaatat attatatggt atatttatat taaatattgg      420
gaaaccaatg ttgtaaattt gatgcttata atgctttagc caatgagagc acaatgatat      480
```

68

```
caatcaagct aaatgaatgc tggtgttatc acaacagtgc tcatttatga aacaa            535


        <210> 228
        <211> 301
        <212> DNA
        <213> Homo sapien


        <400> 228
aaacaataaa caccatcaac cttattgact ttattgtccc ttaaattata ttgactgttg       60
tgattccatc aagtttgtac actcttttct ctccctgttt tgcagcaaca aattgcgaag      120
tgcttttgtt tgtttgtttt cgtttggtta aagcttattg ccatgctggt gcggctatgg      180
agactgtctg gaaggcttgg aatggtttat tgcttatggt aaaatttgcc tgatttctta      240
caggcagcgt ttggaaacct tttattatat agttgtttac atacttataa gtctatcatt      300
t                                                                      301


        <210> 229
        <211> 420
        <212> DNA
        <213> Homo sapien


        <400> 229
aaagttgctt tgctggaagt ttttataagg aatctcagat taaaccttta gaagtttaat       60
tgacactagg aagccaaacc aaggctgact tcagactttg tttgtagtac ctgtgggttt      120
attacctatg ggtttatatc ctcaaatacg acattctagt caaagtcttg gtaatataac      180
caatgttttc aaatgtattc tgtcatacaa agagcagatt tttattgaac ttgtgcaata      240
actatattac catacaatat aaatattcat gaatagtttc ccaagtctgg agcgaccaca      300
tagggagaaa atgcaaatgt ctcatttttt gttcacaaaa gtatatttta tcaaattgct      360
gtaagctgtg gatagcttaa aagaaaaaaa gtttcctgaa atctgggaaa caagacattt      420


        <210> 230
        <211> 419
        <212> DNA
        <213> Homo sapien


        <400> 230
gtgaagtcct aaagcttgca ttccaccagc ttctacaata gccggcttat tactagagca       60
gacagatagc accttcagca ctctgcttgt ggtccacagt agtttttcgt aagtataggt      120
cctcattata tttactaaag cttggggtcc accactagcc agtatgatga gcttgctttc      180
ttggttgcca taagctaaaa tttgaaggca gtctgtcgta atagccaaga atttaacatt      240
tgtttttgttg agcaaggcaa ccattttctg cagcccacca gctaaacgca ctgccatttt      300
agctccttct tgatgtaata aaaggttgtg gagagttgta atggcataaa acaacacaga      360
atccactggt gaaccaagca ttttcaccag ggcaggaatg cctccagact taaagatgg       419


        <210> 231
        <211> 389
        <212> DNA
        <213> Homo sapien


        <400> 231
ttgttcagag ccctggtgga tcttgcaatc cagtgcccta caaaggctag aacactacag       60
gggatgaatt cttcaaatag gagccgatgg atctgtggtc ctttgggact catcaaagcc      120
ttggtttagc attttgtcag ttttatcttc agaaattctc tgcgattaag aagataattt      180
attaaaggtg gtccttccta cctctgtggt gtgtgtcgcg cacacagctt agaagtgcta      240
taaaaaagga aagagctcca aattgaatca cctttataat ttacccatttt ctatacaaca      300
ggcagtggaa gcagtttcag agaacttttt gcatgcttat ggttgatcag ttaaaaaaga      360
atgttacagt aacaaataaa gtgcagttt                                        389


        <210> 232
```

<211> 397
<212> DNA
<213> Homo sapien

<400> 232
```
ccaggataat atacacaggt ttgcagctaa aactgtgcac agtgggtcat tgatgctagt    60
cacagtggaa ctgaaggaag gctctacagc ccagcttatc ataaacactg agaaaactgt   120
gattggctct gttctgctgc gggaactgaa gcctgtcctg tctcaggggt aacctgctta   180
catctggact ttagaatctg gcacacaaca aaagtgcctg gcatccacta ctgctgcctt   240
tcatttataa taatagccct tccatctggc agtgggggaa gaatacactc ttgacattct   300
tgtctcctgc tttagaatgc tagtgtgtat ctatcatgta tgcaatactt tcccccttt    360
tgctttgcta accaaagagc atatatttta ctgtcag                           397
```

<210> 233
<211> 508
<212> DNA
<213> Homo sapien

<400> 233
```
cgaggagtcg cttaagtgcg aggacctcaa agtgggacaa tatatttgta aagatccaaa    60
aataaatgac gctacgcaag aaccagttaa ctgtacaaac tacacagctc atgtttcctg   120
ttttccagca cccaacataa cttgtaagga ttccagtggc aatgaaacac atttttactgg  180
gaacgaagtt ggttttttca agcccatatc ttgccgaaat gtaaatggct attcctacaa   240
agtggcagtc gcattgtctc tttttcttgg atggttggga gcagatcgat tttaccttgg   300
ataccctgct ttgggtttgt taaagttttg cactgtaggg ttttgtggaa ttgggagcct   360
aattgatttc attcttattt caatgcagat tgttggacct tcagatggaa gtagttacat   420
tatagattac tatggaacca gacttacaag actgagtatt actaatgaaa catttagaaa   480
aacgcaatta tatccataaa tatttttt                                     508
```

<210> 234
<211> 358
<212> DNA
<213> Homo sapien

<400> 234
```
aaatgttggt attcaaaacc aaagatataa ccgaaaggaa aaacagatga gacataaaat    60
gatttgcaag atgggaaata tagtagttta tgaatgtaaa ttaaattcca gttataatag   120
tggctacaca ctctcactac acacacagac cccacagtcc tatatgccac aaacacattt   180
ccataacttg aaaatgagta ttttgcatat ctcagttcag gatatgtttt ttacaagtta   240
atcctaaagt cataaagcaa gaagctattc atagtacaag attttatttg ctaagctttta  300
caaattaaac tctaaaaaat tattacaatg atactgaaag atatttatt ggccttttt    358
```

<210> 235
<211> 482
<212> DNA
<213> Homo sapien

<400> 235
```
gaagaaagtt agatttacgc cgatgaatat gatagtgaaa tggattttgg cgtaggtttg    60
gtctaggggtg tagcctgaga ataggggaaa tcagtgaatg aagcctccta tgatggcaaa  120
tacagctcct attgatagga catagtggaa gtgagctaca acgtagtacg tgtcgtgtag   180
tacgatgtct agtgatgagt ttgctaatac aatgccagtc aggccaccta cggtgaaaag   240
aaagatgaat cctagggctc agagcactgc agcagatcat ttcatattgc ttccgtggag   300
tgtggcgagt cagctaaata ctttgacgcc ggtgggggata gcgatgatta tggtagcgga   360
ggtgaaatat gctcgtgtgt ctacgtctat tcctactgta aatatatggt gtgctcacac   420
gataaaccct aggaagccaa ttgatatcat agctcagacc ataccctatgt atccaaatgg  480
tt                                                                  482
```

```
<210> 236
<211> 149
<212> DNA
<213> Homo sapien

<400> 236
cctcttcatt gttcacatgt cacaggagga ggctctgagc aaaggccact ggcaagttag        60
ggcaacacca agaaggctct gcggagagac tccctgtggg ttggggcctg gcaggaacgg       120
tgcctgtgga ctgtttatgg tctgtccag                                         149

<210> 237
<211> 391
<212> DNA
<213> Homo sapien

<400> 237
gaagctaaat ccaaagaaat atgaaggtgg ccgtgaatta agtgattta ttagctatct         60
acaaagagaa gctacaaacc cccctgtaat tcaagaagaa aaacccaaga agaagaagaa       120
ggcacaggag gatctctaaa gcagtagcca aacaccactt tgtaaaagga ctcttccatc       180
agagatggga aaaccattgg ggaggactag gacccatatg ggaattatta cctctcaggg       240
ccgagaggac agaatggata taatctgaat cctgttaaat tttctctaaa ctgtttctta       300
gctgcactgt ttatggaaat accaggacca gtttatgttt gtggttttgg gaaaaattat       360
ttgtgttggg ggaaatgttg tggggtgggg g                                      391

<210> 238
<211> 374
<212> DNA
<213> Homo sapien

<400> 238
aaaaaacaaa acaatgtaag taaaggatat ttctgaatct taaaattcat cccatgtgtg        60
atcataaact cataaaaata attttaagat gccggaaaag gatactttga ttaaataaaa       120
acactcatgg atatgtaaaa actgtcaaga ttaaaattta atagtttcat ttatttgtta       180
ttttatttgt aagaaatagt gatgaacaaa gatcctttt catactgata cctggttgta        240
tattatttga tgcaacagtt ttctgaaatg atatttcaaa ttgcatcaag aaattaaaat       300
catctatctg agtagtcaaa atacaagtaa aggagagcaa ataaacaaca tttggaaaaa       360
aaaaaaaaaa aaaa                                                         374

<210> 239
<211> 200
<212> DNA
<213> Homo sapien

<400> 239
aaagatgtct ttgaccgcat atgtactgga aatttcaaac gtggatcttc ccaggttgta        60
gtctttgtgt tatgatcaat gaagaagggc cggccgtttg gcgctatcct catttcccag       120
ccgggtggca agaagctctg tgtgactttg tgttgtggtt tgggggagtt gtaaggtgat       180
ggctgtgggg actgtgggtt                                                   200

<210> 240
<211> 314
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(314)
<223> n = A,T,C or G
```

71

```
    <400> 240
ctggtaaact gtccaaaaca aggttccaaa taacacctct tactgattta ccctacccat        60
acatatncca natagntttt gatcaaaaac atgaaatana tccacctgct tattttaagc       120
atattaaaaa ggaaactaat tggaccattt tctatttgtc tattttatac aaaaaggcta       180
cacaattgat acactctatt cagataacaa tcaattagag tgantatgaa ttactggcga       240
caccatcact caattcttaa aaattagaaa ttgctgtagc agtattcact ataacttaac       300
actaccgaga gact                                                          314

    <210> 241
    <211> 375
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(375)
    <223> n = A,T,C or G

    <400> 241
ccaagtcctt ggagttatag gatattcatt acttcctctc attgtaatag ccctgtact        60
tttggtggtt ggatcatttg aagtggtgtc tacacttata aaactgtttg gtgtgttttg       120
ggctgcctac agtgctgctt cattgttagt gggtgaagaa ttcaagacca aaaagcctct       180
tctgatttat ccaatctttt tattatacat ttatctttg tcgttatata ctggtgtgtg        240
atccaagtta tacatgaata gaaaaagatg gtgttaaatt tgtgtgtagg ctgggaattc       300
tngctaaagg aatggnaaaa aacctgtnnt tgnaaaattn acntgtccca aagnnaagga       360
anctaaacgc ttttt                                                         375

    <210> 242
    <211> 387
    <212> DNA
    <213> Homo sapien

    <400> 242
aaaggcattc tctgatttac atgagaattg agaaactgag atgtatgatt tgtctgttag        60
tcaatttcac acccttt cat·tctcataagc cccaaatttt gctcagttaa ggagcttgct      120
ttaggcccac ctatgtaagt ctgttatact agctaatgtg cccatttgaa tagttcaagg       180
gtcagctaat gctctgagct tcatggctcc agtataaaga acaaatttaa caaaattaag       240
ctgttactgt agccgagtta cccttctgct ccacacatat gtagtgggat cttgcaggat       300
ttccatagtg ccaattatca aaggccttga ctacttagca ttgctgtatt acagatgtgc       360
aaactgaggc actgaaaagt caaattt                                            387

    <210> 243
    <211> 536
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(536)
    <223> n = A,T,C or G

    <400> 243
aaaccaaaag gacgaagaaa aaacactttn aaaaaaaaaa aaaaaaaaga aaaaccaaac        60
catattttgc cacatgtgag agtacggtca agcagtattt acaaaaaggt taacggaaca       120
acactctgac acatgctctg agaatactgg gactgctgtt tcaaaaaaaa aggttcaaac       180
ttattgtcac agcatcatca caaaatagag gatcaccatt ggtttgcttg gcttttcttt       240
tttttttttcc cccaagtgag gacctaactc caaataatac aatagaatat gcaaattatc       300
```

72

```
ttcacatcaa gagtacccca agaaaaacga aatccatggc acanacactg tacaagggtg      360
cagggcaggg ctctgagggg cccaaacccc attttgccaa ctcgattttc tagcattgaa      420
gggagcaagg ggtcaggcat atgatggaga tgatactgaa atgatttatc caaaatccat      480
gcaaatcaag ttctttggat agaggtgaan aacttggaca tggctgtttc aggcag         536
```

        <210> 244
        <211> 397
        <212> DNA
        <213> Homo sapien

        <400> 244

```
ccaggataat atacacaggt ttgcagctaa aactgtgcac agtgggtcat tgatgctagt       60
cacagtggaa ctgaaggaag gctctacagc ccagcttatc ataaacactg agaaaactgt      120
gattggctct gttctgctgc gggaactgaa gcctgtcctg tctcaggggt aacctgctta      180
catctggact ttagaatctg gcacacaaca aaagtgcctg gcatccacta ctgctgcctt      240
tcatttataa taatagccct tccatctggc agtgggggaa gaatacactc ttgacattct      300
tgtctcctgc tttagaatgc tagtgtgtat ctatcatgta tgcaatactt tccccctttt      360
tgctttgcta accaaagagc atatatttta ctgtcag                              397
```

        <210> 245
        <211> 508
        <212> DNA
        <213> Homo sapien

        <400> 245

```
cgaggagtcg cttaagtgcg aggacctcaa agtgggacaa tatatttgta aagatccaaa       60
aataaatgac gctacgcaag aaccagttaa ctgtacaaac tacacagctc atgtttcctg      120
ttttccagca cccaacataa cttgtaagga ttccagtggc aatgaaacac atttttactgg     180
gaacgaagtt ggttttttca agcccatatc ttgccgaaat gtaaatggct attcctacaa      240
agtggcagtc gcattgtctc tttttcttgg atggttggga gcagatcgat tttaccttgg      300
ataccctgct ttgggtttgt taaagttttg cactgtaggg ttttgtggaa ttgggagcct      360
aattgatttc attcttattt caatgcagat tgttggacct tcagatggaa gtagttacat      420
tatagattac tatggaacca gacttacaag actgagtatt actaatgaaa catttagaaa      480
aacgcaatta tatccataaa tatttttt                                        508
```

        <210> 246
        <211> 358
        <212> DNA
        <213> Homo sapien

        <400> 246

```
aaatgttggt attcaaaacc aaagatataa ccgaaaggaa aaacagatga gacataaaat       60
gatttgcaag atgggaaata tagtagttta tgaatgtaaa ttaaattcca gttataatag      120
tggctacaca ctctcactac acacacagac cccacagtcc tatatgccac aaacacattt      180
ccataacttg aaaatgagta ttttgcatat ctcagttcag gatatgtttt ttacaagtta      240
atcctaaagt cataaagcaa gaagctattc atagtacaag attttatttg ctaagcttta      300
caaattaaac tctaaaaaat tattacaatg atactgaaag atattttatt ggcctttt        358
```

        <210> 247
        <211> 673
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(673)
        <223> n = A,T,C or G

```
        <400> 247
gaagaaagtt agatttacgc cgatgaatat gatagtgaaa tggattttgg cgtaggtttg       60
gtctagggtg tagcctgaga atagggggaaa tcagtgaatg aagcctccta tgatggcaaa      120
tacagctcct attgatagga catagtggaa gtgagctaca acgtagtacg tgtcgtgtag      180
tacgatgtct agtgatgagt ttgctaatac aatgccagtc aggccaccta cggtgaaaag      240
aaagatgaat cctagggctc agagcactgc agcagatcat ttcatattgc ttccgtggag      300
tgtggcgagt cagctaaata ctttgacgcc ggtggggata gcgatgatta tggtagcgga      360
ggtgaaatat gctcgtgtgt ctacgtctat tcctactgta aatatatggt gtgctcacac      420
gataaaccct aggaagccaa ttgatatcat agctcagacc ataccatgt atccaaatgg       480
ttcttttttt ccggagtagt aagttacaat atgggagatt attccgaagc ctggtaggat      540
aagaatataa acttcagggt gaccgaaaaa tcagaatagg tgttggtata gaatggggtc      600
tcctnctccg cggggtcnaa gaaggtggtg ttgangttgc cggnctgtta ntagtatagn      660
gatgccanca gct                                                          673
```

```
        <210> 248
        <211> 149
        <212> DNA
        <213> Homo sapien
```

```
        <400> 248
cctcttcatt gttcacatgt cacaggagga ggctctgagc aaaggccact ggcaagttag       60
ggcaacacca agaaggctct gcggagagac tccctgtggg ttggggcctg gcaggaacgg      120
tgcctgtgga ctgtttatgg tctgtccag                                         149
```

```
        <210> 249
        <211> 458
        <212> DNA
        <213> Homo sapien
```

```
        <220>
        <221> misc_feature
        <222> (1)...(458)
        <223> n = A,T,C or G
```

```
        <400> 249
gaagctaaat ccaaagaaat atgaaggtgg ccgtgaatta agtgatttta ttagctatct       60
acaaagagaa gctacaaacc ccctgtaat tcaagaagaa aaacccaaga agaagaagaa       120
ggcacaggag gatctctaaa gcagtagcca aacaccactt tgtaaaagga ctcttccatc      180
agagatggga aaaccattgg ggaggactag gacccatatg ggaattatta cctctcaggg      240
ccgagaggac agaatggata taatctgaat cctgttaaat tttctctaaa ctgtttctta      300
gctgcactgt ttatggaaat accaggacca gtttatgttt gtggttttgg gaaaaattat      360
ttgtgttggg ggaaatgttg tgggggtggg gttgagttgg gggtattttc taattttttt      420
tgtacatttg gaacagtgac aataaatgan accccttt                              458
```

```
        <210> 250
        <211> 374
        <212> DNA
        <213> Homo sapien
```

```
        <400> 250
aaaaaacaaa acaatgtaag taaaggatat ttctgaatct taaaattcat cccatgtgtg       60
atcataaact cataaaaata attttaagat gccggaaaag gatactttga ttaaataaaa      120
acactcatgg atatgtaaaa actgtcaaga ttaaaattta atagtttcat ttatttgtta      180
ttttatttgt aagaaatagt gatgaacaaa gatccttttt catactgata cctggttgta      240
tattatttga tgcaacagtt ttctgaaatg atatttcaaa ttgcatcaag aaattaaaat      300
catctatctg agtagtcaaa atacaagtaa aggagagcaa ataaacaaca tttggaaaaa      360
aaaaaaaaaa aaaa                                                         374
```

74

```
<210> 251
<211> 356
<212> DNA
<213> Homo sapien

<400> 251
aaagatcttc tctaacaagc tatgggaatt tggcttcata ctctttcttt gcaacagcag        60
tgttctgggt gataattttg aattgatacc tgttcctttt tctgggtttt gttggctttt       120
tgaaaaattg tctttcctta tcattggtgg gaggcttggt agcaaagtaa cattttttgg       180
aaaagaggac agaaaaattg aactacagct tgagaacgta ttctttttt cctactttgt        240
tattgcaaat tgaggaatca cttttaactg ttttaggtgt gtgtgtccag agtgagcaag       300
gattatgttt ttggattgtc aaagaggatg cttagtctta aaataaaaat aaattt          356


<210> 252
<211> 484
<212> DNA
<213> Homo sapien

<400> 252
ctggtaaact gtccaaaaca aggttccaaa taacacctct tactgattta ccctacccat        60
acatatccca aatagttttt gatcaaaaac atgaaataga tccacctgct tattttaagc       120
atattaaaaa ggaaactaat tggaccattt tctatttgtc tattttatac aaaaaggcta       180
cacaattgtt acactttatt cagattacaa ttaattagag tgattatgaa ttagtgttct       240
acaccattac tcaattctta aaaattagaa attgctgtag cagtattcac tataacttaa       300
cactacgaga gacttaaaaa acagttactg caaaaaaaaa aaagagctac ttcaaagcaa       360
gcaaagtcag taccattaca gatattctta aaaaaaaaa aaaatttaac aagcaaggct        420
agggtttgat aaattccatc ttgtgatcca ttcttgtgca ttcttcactt cttgagtcac       480
tccc                                                                     484


<210> 253
<211> 379
<212> DNA
<213> Homo sapien

<400> 253
aaaaagcgct tagacttccc tttccatctg gaacatgtaa aattttgcag caacaggttt        60
tctccaattc cttcagcaag aattcccagc ctacacacaa atttaacacc atcttttct         120
attcatgtat aacttggatc acacaccagt atataacgac aaaagataaa tgtataataa       180
aaagattgga taaatcagaa gaggcttttt ggtcttgaat tcttcaccca ctaacaatga       240
agcagcactg taggcagccc aaaacacacc aaacagtttt ataagtgtag acaccacttc       300
aaatgatcca accaccaaaa gtacaggggc tattacaatg agaggaagta atgaatatcc       360
tataactcca aggacttgg                                                     379


<210> 254
<211> 387
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(387)
<223> n = A,T,C or G

<400> 254
aaatttgact tttcagtgcc tcagtttgca catctgtaat acagcaatgc taagtagtca        60
aggccnttga taattggcac tatggaaatc ctgcaagatc ccactacata tgtgtggagc       120
agaagggtaa ctcggctaca gtaacagctt aattttgtta aatttgttct ttatactgga       180
gccatgaagc tcagagcatt agctgaccct tgaactattc aaatgggcac attagctagt       240
```

75

```
ataacagact tacataggtg ggcctaaagc aagctcctta actgagcaaa atttgggget    300
tatgagaatg aaagggtgtg aaattgacta acagacaaat catacatctc agtttctcaa    360
ttctcatgta aatcagagaa tgcctttt                                        387
```

```
        <210> 255
        <211> 225
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(225)
        <223> n = A,T,C or G

        <400> 255
aaatgtcttg tttcccagat ttcaggaaan tttttttctt ttaagctatc cacagcttac    60
agcacctttg ataaaatata cttttgtgaa caaaaattga gacatttaca ttttctccct    120
atgtggtcgc tccagacttg ggaaactatt catgaatatt tatattgtat ggtaatatag    180
ttattgcaca agttcaataa aaatctgctc tttgtatgac agaat                     225
```

```
        <210> 256
        <211> 544
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(544)
        <223> n = A,T,C or G

        <400> 256
ccttgcttaa agcccagaag tggtttaggc ntttggaaaa tctggttcac atcataaaga    60
acttgatttg aaatgttttc tatagaaaca agtgctaagt gtaccgtatt atacttgatg    120
ttggtcattt ctcagtccta tttctcagtt ctattatttt agaacctagt cagttcttta    180
agattataac tggtcctaca ttaaaataat gcttctcgat gtcagatttt acctgtttgc    240
tgctgagaac atctctgcct aatttaccaa agccagacct tcagttcaac atgcttcctt    300
agcttttcat agttgtctga catttccatg aaaacaaagg aaccaacttt gttttaacca    360
aactttgttt ggttacagtt ttcaggggag cgtttcttcc atgacacaca gcaacatccc    420
aaagaaataa acaagtgtga caaanaaaaa aacaaaccta aatgctactg ttccaaagag    480
caacttgatg gttttttta atactgagtg caaaaggnca cccaaattcc tatgatgaaa    540
tttt                                                                  544
```

```
        <210> 257
        <211> 420
        <212> DNA
        <213> Homo sapien

        <400> 257
aaatgtcttg tttcccagat ttcaggaaac tttttttctt ttaagctatc cacagcttac    60
agcaatttga taaaatatac ttttgtgaac aaaaattgag acatttacat tttctcccta    120
tgtggtcgct ccagacttgg gaaactattc atgaatattt atattgtatg gtaatatagt    180
tattgcacaa gttcaataaa aatctgctct ttgtatgaca gaatacattt gaaaacattg    240
gttatattac caagactttg actagaatgt cgtatttgag gatataaacc cataggtaat    300
aaacccacag gtactacaaa caaagtctga agtcagcctt ggtttggctt cctagtgtca    360
attaaacttc taaaagtttta atctgagatt ccttataaaa acttccagca aagcaacttt    420
```

```
        <210> 258
        <211> 736
```

76

```
        <212> DNA
        <213> Homo sapien

        <400> 258
aaacaaaatg ctaaacctaa aaacattgtt ctgtcagttc ccaaattaaa tctacttaga      60
acaaaaacaa aaatttatag ctcggtcaca tactacttaa ataatattgt tcaggcatct     120
ctaaaatcct ccatgttttc aagtatggaa atagaactca aatattccac aatacagtac     180
taaacagatg gagtatttag gaaagacttt gttgtcatat ggcacaatat taatattttg     240
ttgcttcaat acgttttgaa ataaatatca gattttgtt tttttttcct aaaagaccaa     300
aattataatc tacattaaga taattctgac tgtggttaag acttaagagt gtaaaataca     360
acatcaatat tttatcacaa aagtaaagct ggtaacaaat tataaaagga gccagtactc     420
tactgagaca ggctcggaga ttaaagctca tcatgataga aatagtcatc atggagctgt     480
ctgccataat ctgtggcttc actggtgaga aacaagtccg ggttttccag aatctcttct     540
tcagagagct ttttgtcacc attcaaatcc atttcatcaa ttagatgaag cgcctcctct     600
tgtgcaatgc cctgattatt aggtctaccc aaggtaacag ctcttgggga tcaagcctgc     660
catcgttatc tttgtcataa tcattcaccg aatctgtctt tctcacaagt atcccattct     720
ggatcttcat ttgcag                                                    736

        <210> 259
        <211> 437
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(437)
        <223> n = A,T,C or G

        <400> 259
aaaaccatac tgaaatcatt taccaaataa cnaagatctt aatctaaaag atagtgaata      60
catcatcatc atgaaatctg gtttatgtg ctctatgaag tacttggaga attgcttttt     120
tatttttctt ttgctttatt aggtcacaca aaacagaatg aattagcaga aaaatgtatg     180
ttataaaaca gcatttacta cttcaattta atttttttta ctaacaattg tggaccttt     240
tgatgacact tatgtatgtt tttaataaat tatgtactta ttagtactta atgagccctt     300
cctgcctcaa tataaaatta ctaaacttgg agaattacag atttttattgt aggccctgat     360
gttagtcact ttggagaagc taaaaatttg gaaatgatgt aattcccact gtaatagcat     420
agggattttg gaagcag                                                   437

        <210> 260
        <211> 592
        <212> DNA
        <213> Homo sapien

        <400> 260
ttttttttt gaaaatata aaattttaat aaaggctaca tctcttaatt acaataatta      60
ttgtaccaag taattttcct taaatgaact ctttataatg cataatttac agtataagta     120
gaacaaaatg tcatgacaaa agtcattgag tacaagactt gtaataaaaa ggcataaaat     180
atatttatac ataaacccct ttcaaaaaac aagggaaagc ttgagccctc aatataggc     240
gacacacgga gcgggtgacc gtgcaggtac aggtactgta ctgatttaaa gtcaagcact     300
agagatagtg gattaatact cttttgccgt acactatata cagatgtata gtacaagtaa     360
caatggcaaa cagaatgtac agattaactt aacacaaaaa cccgaacatc aaaatgaagg     420
tgtgtggagg aaaggtgctg ctgggtctcc ctacaactgt tcatttcttt gtggggcagg     480
gggtagttcc tgaatggctg tggtccaatg actaatgtaa aacaaaaaca gaaacaaaaa     540
aaacaaggaa ctgtcatttc cacgaaagca cagcggcagt gattctagca gg            592

        <210> 261
        <211> 450
        <212> DNA
```

```
<213> Homo sapien

<400> 261
gtggcagggc ccagccccga accagacaag ggacccctca aggagcttca ttctagcatg      60
agaaaattga gaagtaaacc agaaagttac agaatgtctg aaggggacag tgtgggagaa     120
tccgtccatg ggaaaccttc ggtggtgtac agattttca caagacttgg acagatttat      180
cagtcctggc tagacaagtc cacaccctac acggctgtgc gatgggtcgt gacactgggc     240
ctgagctttg tctacatgat tcgagtttac ctgctgcagg gttggtacat tgtgacctat     300
gccttgggga tctaccatct aaatctttc atagctttc tttctcccaa agtggatcct       360
tccttaatgg aagactcaga tgacggtcct tcgctaccca ccaaacagaa cgaggaattc     420
cgccccttca ttcgaaggct cccagagttt                                       450


<210> 262
<211> 239
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(239)
<223> n = A,T,C or G


<400> 262
taactttgat gacaaaatct aaaattaaag anttagtctt aaaagcctat agtgacttgt      60
ttacttgcat aaataatatt ttcacttagt acaggctatt aatataagta atgagaattt     120
aagtattaac tcaaaaaaag atagaggctc caaacttttc taagaaatta atgcattttc     180
aaagtaataa tataatcaat ctgtaagtca aaagtaattt catattcatt gccaaattt       239


<210> 263
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G


<400> 263
aaaaaaaaaa aaaaaaaatt ccttgtngtt tnttagagga aaaaagaaa aaccccaact        60
tttancactg atactacata ttgctctgtt aaagaatttt ctctgccaaa aaaaagaaaa     120
aacaaaaaaa cgcttaaagc tggagtttga cattctgctt tcagatgctg tcttttatt      180
agtgagtgat gatggtttgc taataatcaa taggtaataa tttttttgtaa tcccatcaag    240
tggctccata tgtttctgct ctctcgtgac tgtgttaatg tttaactgtt gtaccttaaa     300
gccgaaatca gtaactatgc atactgtaac caaggtattg ggcttacaga gttgtttgtt     360
gnataaagaa aatttt                                                      376


<210> 264
<211> 207
<212> DNA
<213> Homo sapien

<400> 264
aaattagcat tccacaaata tacaggtaat ttaataatta ttgtgcatga atacatacac     60
aatgcttata tatacaaatt ccagtttgtt ttcatgtgct ggcaagggat ttgtatacaa     120
tcataagctg tgttcatatt ggtcccattg aatattcaca atacaaaagc acaaaagaac     180
cattgatttta caaaggaaa tctattt                                          207
```

78

```
            <210> 265
            <211> 388
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(388)
            <223> n = A,T,C or G

            <400> 265
naactgcact ttatttgtta ctgtaacatt nttttttaac tgatcaacca taagcatgca        60
aaagnccnct gaaactgctt ccactgcctg ttgtatagaa atgggtaaat tataaaggtg       120
attcaatttg gagctccttc cttttttata gcacttctaa gctgtgtgcg cgacacacac       180
cacagaggta ggaaggacca cctttaataa attatcttct taatcgcaga gaatttctga       240
agataaaact gacaaaatgc taaaccaagg ctttgatgag tcccaaagga ccacagatcc       300
atcggctcct atttgaagaa ttcatcccct gtagtgttct agcctttgta gggcactgga       360
ttacaagatc caccagggct ctgaacaa                                          388

            <210> 266
            <211> 616
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(616)
            <223> n = A,T,C or G

            <400> 266
aaatacagag tcaaagatg atttataaaa tntaaaacat tttctgcttg gccgtatttg        60
aagacaagct gaatacatat ctatgttctg aataagtcca ctatggatat atataggaag       120
agatatacat atatccatcc acagatacac acacacatat atatttctgc atgtatatat       180
acataattct ttctatagtt acaggaaata cttcttctat aattctgatt ttgactccca       240
tcctccacca tttactcatc cactcattac ctaaatcttg gctttctttc ctatattgta       300
aataatccat ccaaacttct agccagtact gtcaggaggg ttcttgctcg agtgagctgt       360
taatactatt ttccactgac aacttctgca catcgaggac acagtgtatc tgaagactcc       420
gctgtatact tccaacaacg ggggcatttt tctttcgtag tcggcatgac aattacttta       480
taggaagact cttcacgaat atcaccacct tctaagttga tgaggaattt cccttaagc       540
tcgattacat ctgcagtcat ctctcgtggt tcctgaccag taaagttgac tcagaagcca       600
tcattaattc attcaa                                                        616

            <210> 267
            <211> 341
            <212> DNA
            <213> Homo sapien

            <400> 267
ccattatgta tgtattttct tgaaaaatac ttatttcagc tacttatttt taatagttac        60
ttattcttgt tgtattgtca tttgagtttt gtatatattt ttgatattaa ccccttgtca       120
catgtataat ttgcaaatat tttctccctt tttttagttg tcacattctg ttcattgtat       180
cagattctgt gcagcagctt tttaatttga agtgatctga ctgacttgtt cttccttttg       240
tgtcctggga tatttaggtt aaatcaaaaa acttgctgcc cagaccaatg ttatggggct       300
ttcactctat ttttttggtag tagtagttta agagtttttag g                          341

            <210> 268
            <211> 367
            <212> DNA
```

79

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(367)
<223> n = A,T,C or G

<400> 268
ttgtagattg gaatagcaaa agtgaatgct ntgaccaaaa tttttgccct cctaaataaa   60
gacgtntcct tctagagagc aaatctatca taaaatgtca aaactagaag agaataaaat   120
gaaaggaaaa aacctagaaa aatatcctaa aatatcaaat gcagtcattt ctaaatataa   180
gccataatta tagctttacc tattgttctt attgttccta tgctgcttct acaatgttac   240
atcaactata cttagcttta ctctcccaaa atcttggtga tgaagccttc tgagtgtgct   300
ttccaatgtg ccagaaccag aagggcattc caaggcttcc ccacatttcc tccatttacg   360
gagacag   367

<210> 269
<211> 270
<212> DNA
<213> Homo sapien.

<220>
<221> misc_feature
<222> (1)...(270)
<223> n = A,T,C or G

<400> 269
caaatctctc cctcactaga cgtaagccnt ttnctcactc tctcaatctt atgcatcata   60
gnaangcngn tgaggtggat taaaccaaac ccagctacgc aaaatcttag catactcctc   120
aattacccac ataggatgaa taatagcagt tctaccgtac aaccctaaca taaccattct   180
taatttaact atttatatta tcctaactac taccgcatcc ctactactca acttaaactc   240
cagcaccacg accctactac tatntcgcac   270

<210> 270
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 270
ctgaatcatg aataacacta tataatagag tntaaggaac acaagcatta gatgtgatcc   60
ttgccccata cccttagatt atgtcagact aaagctgaca attctgccag gctctgaacc   120
cctagtgccc ccaacccaaa tcttggaagc aaagaatatg ccctgtcata caactttgta   180
caagttgtag taaaacaaag cttaagtttt ctcatctttc tacagcaaat ggtcagttat   240
ttaataaaca ctaaaatgct cctaagaatc cattttgagt ttgtttacca aacacattgt   300
gcaagaactg actacacaaa aagttccttt gaaatttggt ccacaaattc acttaaggtt   360
ggaaattt   368

<210> 271
<211> 313
<212> DNA
<213> Homo sapien

<220>

80

```
<221> misc_feature
<222> (1)...(313)
<223> n = A,T,C or G

<400> 271
aaatttatat aaaactctgt acatgttcac tttattattg cataaacagc ataatcttca    60
agacaanngt ttgcaaacac atgtccaatt caggaaaaaa aatttcacgt ttctcgtctg   120
gctttttttct tctttttttat ttgtttggga gattcccagc tagtttcaga cttggtctgt   180
gaaggaggca cactattttg cttggtattt gacttggatt tatctgtctc ttgtagtatt   240
ggcggcactt gggaagagct cttgtcagaa tcactttttg ataagattac agatggctcg   300
gtagaagtag cag                                                      313


<210> 272
<211> 462
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(462)
<223> n = A,T,C or G

<400> 272
aaaaaacatt tattttaata agactattgc naacacatta aaaaaactaa atagtaatat    60
tacaaaatct atatacttgc acatttagta tttgtcaatg tgccagaggt tttcttcatg   120
aaatttgact tctttgaagt gaaggctttt ttctatcatc tcttatagct ctgactgaat   180
aagtcttaat gctttcttca tgttttctat caataggggt aaatcccgag gctcatatgt   240
gtacaatctg ttagagtatc ttccagctat gtcagctcta actgttaaag aagggtctac   300
aaacatgatt ctaggcacat attgcccatc aggtgataaa ttcttatcag tggtttcatg   360
cataaggttt agcatgatga acttattctg agccatttct tgtatttctt cattttgggc   420
aaatactttc tttagtgctt gagagtattg acaatcctcc ag                      462


<210> 273
<211> 282
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(282)
<223> n = A,T,C or G

<400> 273
ctgatcaaag catgggatat tttaatagtn ttatacataa tattttttaca tagaaaactt    60
tacatnncat ttcatattat ataattctgc ttattctttc aaaaatttat acatccattg   120
ggcaaggaat ggttttcatt aaattaccaa tattaaatgc acttaatcat tgtgtatagg   180
ttaaaccaaa gtaactatta actaacttttt aggcatttta aggaggtaaa acatacattt   240
tacacataag tatttgatgc aaatatgcag ataaaatttt tt                      282


<210> 274
<211> 125
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(125)
<223> n = A,T,C or G
```

```
        <400> 274
cagccctaga cctcaactac ctaaccaacn ttncttaaaa taaaatcccc actatgcaca      60
ttnaatcnct ccaacatact cggattctac cctagcatca cacaccgcac aatcccctat     120
ctagg                                                                 125

        <210> 275
        <211> 528
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(528)
        <223> n = A,T,C or G

        <400> 275
aaagctgtgg aaaagcttta ttatagattt ttntacagaa ttaaaaaagt tcaaacaata      60
ataagccngg aaccacaaat aattaaaagg aaacacagca atcccataaa caagcattct     120
ggcatctgtt agaaattttc cctcaaatta tgaaatgtag ctctccatgc tttccaatga     180
ttgttataat acccacaaat atctgtgatt tcagtggaat actttaacaa aagttttctt     240
tttaaggcat gatcctgatt cattttttct tcaatatctc agtcatttca ggaactacct     300
taaataaatc tgcaactatt ccataatctg ccacttggaa aattggagct tctgggtctt     360
tattaattgc cacaattgtc ttgctgtctt tcatcccagc taaatgttgg atggctccag     420
atattccaac agcaatataa agttctggtg ctactatttt tcccgtctgn ccaacttgca     480
tgtcattggg aacaaagcca gcatcaacag cagcacggga agcaccaa                  528

        <210> 276
        <211> 420
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(420)
        <223> n = A,T,C or G

        <400> 276
aaatgtcttg tttcccagat ttcaggaaan ttttttttctt ttaagctatc cacagcttac      60
agaaacctga taaaatatac ttttgtgaac aaaaattgag acatttacat tttctccta     120
tgtggtcgct ccagacttgg gaaactattc atgaatattt atattgtatg gtaatatagt     180
tattgcacaa gttcaataaa aatctgctct ttgtatgaca gaatacattt gaaaacattg     240
gttatattac caagactttg actagaatgt cgtatttgag gatataaacc cataggtaat     300
aaacccacag gtactacaaa caaagtctga agtcagcctt ggtttggctt cctagtgtca     360
attaaacttc taaaagttta atctgagatt ccttataaaa acttccagca aagcaacttt     420

        <210> 277
        <211> 668
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(668)
        <223> n = A,T,C or G

        <400> 277
ccagggtggc tctgatatag cagccctggt ntattttcga tatttcagga agactggcag      60
```

82

```
atngcaccag accctgaatt cttctagctc ctccaatccc attttatccc atggaaccac      120
taaaaacaag gtctgctctg ctcctgaagc cctatatgct ggagatggac aactcaatga      180
aaatttaaag ggaaaaccct caggcctgag gtgtgtgcca ctcagagact tcacctaact      240
agagacaggc aaactgcaaa ccatggtgag aaattgacga cttcacacta tggacagctt      300
ttcccaagat gtcaaaacaa gactcctcat catgataagg ctcttacccc cttttaattt      360
gtccttgctt atgcctgcct ctttcgcttg gcaggatgat gctgtcatta gtatttcaca      420
agaagtagct tcagagggta acttaacaga gtatcagatc tatcttgtca atcccaacgt      480
tttacataaa ataagagatc ctttagtgca cccagtgact gacattagca gcatctttaa      540
cacagccgtg tgttcaaatg tacagnggtc cttttcagag ttggacttct agactcacct      600
gttctcactc cctgttttaa ttcaacccag ccatgcaatg ccaaataata gaaattgctc      660
cctaccag                                                             668
```

```
         <210> 278
         <211> 202
         <212> DNA
         <213> Homo sapien

         <220>
         <221> misc_feature
         <222> (1)...(202)
         <223> n = A,T,C or G

         <400> 278
aaattggtat cgacggcaac caggggaagn tnctaaactc ctaatctatt ctggatccaa      60
ttngcnaagt ggggtcccat caaggttcag tggcagtgga tctgggacag atttcactct      120
cacgatcagc agtctgcaac ccgaagattt tgcaacttac tactgtcaac agagttacat      180
gtccccgtac acttttggac cc                                             202
```

```
         <210> 279
         <211> 694
         <212> DNA
         <213> Homo sapien

         <220>
         <221> misc_feature
         <222> (1)...(694)
         <223> n = A,T,C or G

         <400> 279
ctgtacttgg acaaaataag ttaattctat ttggttgtcc attaaagttt tatgtggcta      60
tgnacccact ggagctaaaa attggctttt aactgtttcc aaatcagaac tagcagagga      120
gagaagtaaa taaagccaat ggcactccct tcagaggctc aaaatggtta gattttgatg      180
cagatttaac cttagcgagt ttcagtcagt ccatttagat gatcctgtag gttcatacaa      240
atacactgaa ccgttggttt aacttctctt ccttcctcaa agtttatgat aaagagactc      300
atccctgtat tgggagtgac tgacataagt tcagatctgc tcagagtggc tggtaaggaa      360
cacttaaggt cagtcagaaa ataatcaaac agacttctca tgtaagcacc gtgactcaca      420
actaagacac tggctgctaa tcctggaata ccgctgtctg aattaacttt agagctgtga      480
ttttttccta aaggaaatat ctctgccaaa gaagtttcca gacagntgct tgggagatcc      540
ttggggaaaa ctggtctttt tgatccggtt ctttcangan taggtngaca aaagaaatnc      600
aaaaaagnct atcccacgcn tttntcacct gggcccagcg gnnctcctcc nggggggggn      660
aaacacangg gactcttccc ngggctngct tnng                                694
```

```
         <210> 280
         <211> 441
         <212> DNA
         <213> Homo sapien

         <400> 280
```

83

```
aaaaaacttc catgcaactt ctggtttatt gtttggcaac tccacatgat aaaaaaataa        60
aaacagccca accgagtttc ggaattaagt attcttctag taagtgattc aaacttgtaa       120
tatttgccac aggactgact tatttattta ctagctagaa gctcttaagt tcacttgttt       180
atcagggcat atacagaagg gtttgttaaa actcgatgtt aactttacaa ctttctgacc       240
tggtgcatga attctcaagt actgtatttc actgtgttgg tgtgtctgat ggaaatttcg       300
aggtggtccc acaaaaatat tttatgtagt gtgccttcaa agagaaccat ttatttctct       360
tcacttatcg tcccacaaag tcacatttgg tggtggtcag ccaagtcgca tctggtctag       420
ttttactctt gtcccaattt t                                                 441
```

```
        <210> 281
        <211> 398
        <212> DNA
        <213> Homo sapien

        <400> 281
aaatttgtta ggtctgaaga atctaaaact gttaatttaa cccttaactt gtgcctagaa        60
actacagcac atataaaata tgtaaacacc agcctgttgc tgtacttttc tgcttatttt       120
acagcctcaa atatttctca ttatcttgtc acttagttct tcatgtttct ccttctgact       180
tttaataatg gtaataggaa aacaaaaccc aaagcttttc agaacttcag tgtgaggttt       240
cctattttga caagttaact tgtaaatact caggttttac gatgtataat ttacctaata       300
gaccaaacta actcatggag atattttgaa ctattattta ggtacaaact ttataaagaa       360
tgttagtatg tcataaaata taacattaca gcttattt                               398
```

```
        <210> 282
        <211> 226
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(226)
        <223> n = A,T,C or G

        <400> 282
aaaacaatat tctctttttg aaaatagtat naacaggcca tgcatataat gtacagtgta        60
ttacnccaat atgtaaagat tcttcaaggt aacaagggtt tgggttttga aataaacatc       120
tggatcttat agaccgttca tacaatggtt ttagcaagtt catagtaaga caaacaagtc       180
ctatcttttt ttttggctgg ggtgggggcg cccaggccga ggctgg                      226
```

```
        <210> 283
        <211> 358
        <212> DNA
        <213> Homo sapien

        <400> 283
aaacaaaaat actcaagatc atttatattt ttttggagag aaaactgtcc taatttagaa        60
tttccctcaa atctgaggga cttttaagaa atgctaacag attttttctgg aggaaattta       120
gacaaaacaa tgtcatttag tagaatattt cagtatttaa gtggaatttc agtatactgt       180
actatccttt ataagtcatt aaaataatgt ttcatcaaat ggttaaatgg accactggtt       240
tcttagagaa atgttttttag gcttaattca ttcaattgtc aagtacactt agtcttaata       300
cactcaggtt tgaacagatt attctgaata ttaaaattta atccattctt aatatttt         358
```

```
        <210> 284
        <211> 288
        <212> DNA
        <213> Homo sapien

        <400> 284
```

84

```
aaaactttttg ttaagaaaaa ctgccagttt gtgctttttga aatgtctgtt ttgacatcat        60
agtctagtaa aattttgaca gtgcatatgt actgttacta aaagctttat atgaaattat        120
taatgtgaag tttttcattt ataattcaag gaaggatttc ctgaaaacat ttcaagggat        180
ttatgtctac atatttgtgt gtgtgtgtgt gtatatatat gtaatatgca tacacagatg        240
catatgtgta tatataatga aatttatgtt gctggtattt tgcatttt                     288
```

```
        <210> 285
        <211> 629
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(629)
        <223> n = A,T,C or G

        <400> 285
cctaaaagca gccaccaatt aacaaagcgt ncannctcaa cacccactac ctaaaaaatc        60
ccaaacatat aactgaactc ctcacaccca attggaccaa tctatcaccc tatanaagaa        120
ctaatgttag tataagtaac atgaaaacat tctcctctgc ataagcctgc gtcagattaa        180
aacactgaac tgacaattaa cagcccaata tctacaatca accaacaagt cattattacc        240
ctcactgtca acccaacaca ggcatgctca taaggaaagg ttaaaaaaag taaaaggaac        300
tcggcaaatc ttaccccgcc tgtttaccaa aaacatcacc tctagcatca ccagtattag        360
aggcaccgcc tgcccagtga cacatgttta acggccgcgg taccctaacc gtgcaaaggt        420
agcataatca cttgntcctt aattagggac ctgtatgaat ggcttcacga gggttcagct        480
gtctcttact tttaaccagt gaaattgacc tgcccgtgaa gaggcnggca tgacacagca        540
agacgagaag accctatgga gctttaatttt attaatgcaa acagnaccta acaaaccccca       600
caggtcctaa acttacccaa accctggca                                          629
```

```
        <210> 286
        <211> 485
        <212> DNA
        <213> Homo sapien

        <400> 286
aaatgtactt gctcagctca actgcatttc agttgtatta tagtccagtt cttatcaaca        60
ttaaaaccta tagcaatcat ttcaaatcta ttctgcaaat tgtataagaa taaagttaga        120
attaacaatt ttatttttgta caacagtgga attttctgtc atggataatg tgcttgagtc        180
cctataatct atagacatgt gatagcaaaa gaaacaaaca aaagccagga aaacactcat        240
tttcgccttg aatatgtaaa tgggattaat tttgtcctgt gccttatgtg gaaaggaact        300
tctttggtttt tccttttttg ttctggtgga agcatgtgca ggagacatat catccaaaca        360
taaaccatta aaatgtttgt ggtttgcttg ctgtaatttt tcaaagtagt taattgagga        420
caaagggtaa tgcagaagtg atagctttgg tttgctgagt cttgttttaa gtggccttga        480
tattt                                                                    485
```

```
        <210> 287
        <211> 340
        <212> DNA
        <213> Homo sapien

        <400> 287
cctggagtcc aataaccacc ccctcatacc acaccctgtg catacaccag ccaagccttt        60
cctggtctgg gaagggaaga gaaaaaagac gcaggccacc tgggggttct gcagtctttg        120
gtcagtccag ccttctatct tagctgcctt tggcttccgc agtgtaaacc ttgcctgccc        180
ggaggcagga ggcccagctg gacctccgag ggccatgagc aggcagcagc catcttggcc        240
tcaagcttgc ctttcccttg agtccctctc tcccctcggc tctagccaga ggtgtagcct        300
gcagatctag gaagagaaga gctggggagg aggatgaagg                             340
```

85

```
<210> 288
<211> 290
<212> DNA
<213> Homo sapien

<400> 288
aaacagtctc tcctcggtgt tctccttgtc aaactgttca tcccagtttc ctctgaaata    60
gacagcattc accagaacca gccttgtcaa tggatccact gagcccggag agagcaactc   120
cgcaatttta ccttctgtct tttcagctac ccaggtgttt atgtgttttc tggacttctc   180
tacggcgctg ataaagtcaa gctcctccat ctctgcttgg tagaattttt ggcaggaatc   240
tctaaaagat gagaggaaat cacaagactt ttccccaaag agcctgttgg              290


<210> 289
<211> 404
<212> DNA
<213> Homo sapien


<400> 289
ccacccacgc ttaggttccc atcacactga tgactccggg tttggcgagc acaggagcgc    60
aaaccttttc acattctttc tgtgatccaa atttgttttc gtttccacca caacctccat   120
accagaatct tgcacagctt ttggtgtttg gatcatagta ccattttaat atgaaatccc   180
tgcaagttcc ttcgtctttc ggcaacttgc atatatctgt ttcagtgaga gccaatggtt   240
ctgtgctcac cattagattg atggttgaac tagaagctga ccttgctggc tgtggaggtg   300
ggggctgaga tttctttgta ctgaaacttc cgtggtaggt ggctctgacc tgagacctca   360
ggtagcagac cacagccaca tggtatgtct gcccagcgag cagg                   404


<210> 290
<211> 384
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(384)
<223> n = A,T,C or G


<400> 290
ccaggcgctc cttgtcggca tcagggaggg tggccttgaa ctgctcatgg gctgtggtca    60
gtccctggat ctcctcaatg gtgtgcacaa tgaaggtgtc ctgcaggtcc tccatggccc   120
cctccatcca gttgttgaag ggtgcagccc gcttggcata ctccaagtac agctggtcaa   180
tggtctccag cagtttctcg gtccgctcca gagcttccct tcgcttctga gttagggccc   240
ccagattgtc ccactggtca cagatctttt ggcaacgggc gttgacactg ggtgagtcat   300
aatantccag ctcattgagc tcctgtgcga tggcggcaat ctgctccaca cggtcctggt   360
gggcagccag gccactctcg aagg                                         384


<210> 291
<211> 278
<212> DNA
<213> Homo sapien


<400> 291
aaagtttatt tttactattt ctttatcact ttattgtatc atcaccattg gtttcataat    60
gtaaatacta tatgttgaac aaattaaatg tcaaaatttt ttattaccat agtccatgtt   120
aatagtgggg ctttcaggtg tttagagatt tttttttgttg ttgttaacat tcattgcaaa   180
agtactagat ggtgtataac tctagagttg aattttaagg gattccctaa tatgtatact   240
atcttttat ctgaagtaat aaataaacaa tgatcttg                          278


<210> 292
```

```
        <211> 177
        <212> DNA
        <213> Homo sapien

        <400> 292
ccttggcccg gtcattcttg tccagtttga taggttcagg aaattcgttg tacagctcca      60
cctccgtttc ctgcttaagt gcattccgtg caatcgtctg gaacgcctgc tccacgttga     120
tggcctcctt ggcactggtc tcaaagtagg gaatgttgtt tttgctgtag caccagg        177


        <210> 293
        <211> 403
        <212> DNA
        <213> Homo sapien

        <400> 293
aaaaagaagg acttagggtg tcgttttcac atatgacaat gttgcattta tgatgcagtt      60
tcaagtacca aaacgttgaa ttgatgatgc agttttcata tatcgagatg ttcgctcgtg     120
cagtactgtt ggttaaatga caatttatgt ggattttgca tgtaatacac agtgagacac     180
agtaatttta tctaaattac agtgcagttt agttaatcta ttaatactga ctcagtgtct     240
gcctttaaat ataaatgata tgttgaaaac ttaaggaagc aaatgctaca tatatgcaat     300
ataaaatagt aatgtgatgc tgatgctgtt aaccaaaggg cagaataaat aagcaaaatg     360
ccaaaagggg tcttaattga aatgaaaatt taattttgtt ttt                       403


        <210> 294
        <211> 305
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(305)
        <223> n = A,T,C or G

        <400> 294
aaagcaatct ggcatggtgt cctgtagtga agcagaggat cataacataa gtaaactctc      60
tatgggtgga agttggagag aaggacattt tggctttgta catgaaaaga ctctccagat     120
agaaacagat tctgcccata agtgaaataa aatgctttgt gggggtaatg agtgacttat     180
agtattcagg cagatgttac ataactgcta attaagtttc cctggattga ntttanncaa     240
anaattgaaa gtngattttg gtcangtgtc agnaaactac tgcctataaa cccatatcnt     300
accca                                                                 305


        <210> 295
        <211> 397
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(397)
        <223> n = A,T,C or G

        <400> 295
cctatctggt tggccttttt gaagacacca acctgtgtgc tatccatgcc aaacgtgtaa      60
caattatgcc aaaagacatc cagctagcac gccgcatacg tggagaacgt gcttaagaat     120
ccactatgat gggaaacatt tcattcccaa aaaaaaaaa aaaaaaaat ttctcttctt       180
cctgttattg gtagttctga acgttagata tttttttttcc atggggtcaa aaggtaccta    240
agtatatgat tgccgagtgg aaaaatagggg acagaaatc aggtattggc agtttttcca     300
tttncatttg tgggngaatt tttaatataa atgcggagac gtaaagcatt aatgcnagtt     360
```

aaaatgtttc agtgaacaag tttcagcggt tcaactt

```
        <210> 296
        <211> 447
        <212> DNA
        <213> Homo sapien

        <400> 296
ccatcctcga tgttgaagtt gtcgtggggc ccgaagacgt tggtgggggat gacagcggtg    60
aaggtgcagc cgtactgctg gaagtaggcc ctgttctgca cgtcgatcat cctcttggca   120
tacgagtacc caaaattgct gttgtgggga ggcccattgt ggatcatggt ctcatctatc   180
gggtaggtcg tcttgtcagg gaagatacag gtggacaggc aggacaccac cttgcgggcg   240
cccacctcga aggccgagtg caggacgttg tcgttcatgt gcacgttttt cctccagaag   300
tccaaattgt atttgatatt ccggaacagg ccccccacca ttgcagcaag atggatgacg   360
tgtgtgagtt ggaccttctc aaacagggcg cgggtctgtg ctgtatccgt gagatcggcg   420
tctttagagg agacaaacac ccagtcc                                       447
```

```
        <210> 297
        <211> 681
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(681)
        <223> n = A,T,C or G

        <400> 297
aaataacagc atgtaaaata ttaaaataca agctttcaaa aataaataca taaataagta    60
gaaccctcgt aagaaatagt caaacacatt aagtcctttc cagctgtccc tagaaagctg   120
ctgttctctt tttcattttc agctctggta agggcaggga ccaccctgca ggaagtgtca   180
atgatacgct gataagcttc ttacttctct cctgtcagtt ggtgctcccc ctgtgatgag   240
aaaagggtta ctgttgcagg tgctaaggaa ggctgctctt ctgtcactct gaagttgctt   300
ggagggatgt ccccatgcag actctctccc agccctccac tcagggaagg tctgtctgta   360
cccactgcct tctatagcag aaaacttgca ctcctgaatg cttttttttt ttttcaagaa   420
agaagnggct gnggactcaa ctagattctt ggtttgaaaa agccaaaaca tattggtcac   480
tgattgtcac attgggttag aaatgtccat tcatgatctc ccttaagctg cacacaaccc   540
tatgaaataa ctaccattat ctaccctatt ttgctaaagc tcaaagagat taaataatgt   600
tgacagggat cttagccttg aactcactga aggngttact gcaaagttct gctcttcacc   660
aagaaggntt acaggccaaa g                                             681
```

```
        <210> 298
        <211> 353
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(353)
        <223> n = A,T,C or G

        <400> 298
cctggcttaa gaccagacat ttgaagaagg ctccaggcag ggaaaggaaa ggagaggcca    60
gccccacnct gnccctccc tgcccccacg tctccagcaa cacaaggcgg ccagtggacc    120
gtgaaccatt tatttccaaa ctataaagaa acctgctctc tgagaaaana cactgcccag   180
gngatgaagc tccagcccct ggaggtccaa aacccagtcc aaactcagtc cctttagaaa   240
gctgctgtgc cttggaaatg annntcggnt gtcanagcct gggaagtggt gggaagaacc   300
agcccactcc cctctcctgc tgcgattcca gcgcncgttg ggnccagatc tgg           353
```

88

```
<210> 299
<211> 560
<212> DNA
<213> Homo sapien

<400> 299
aaagttcaag gactaacctt atttatttgg gaaaggggag gaggaaggaa atgatatggt        60
acccagacac tgggctaggc tgcaacttta tctcatttaa tactcccagc tgtcatgtga       120
gaaagaaagc aggctaggca tgtgaaatca cttttcatgga ttattaatgg atttaagagg     180
gcatcaatca gctcaactca agatttcata atcattttta gtatttagat tgtgcctcaa       240
agttgtagta cctcacaata cctccactgg tttcctgttg taaaaacctt cagtgagttt       300
gaccattgtg ctcttggctc ttgggctgga gtaccgtggt gagggagtaa acactagaag       360
tctttagtac aaaactgctc tagggacacc tggtgattcc tacacaagtg atgtttatat       420
ttctcataaa gagtcttccc tatcccaagg tcttcatgat gccagtagcc atatatgata       480
aattatgttc agtgataact tagttatcag aaatcagctc agtggtcttc cccgccatga       540
ttcacatttg atgagttttt                                                    560
```

```
<210> 300
<211> 165
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(165)
<223> n = A,T,C or G

<400> 300
aaaaactaca taggggtgtg tgtgtgtgtg tatgtttatt ttatacacac atatttgtat        60
attctaatat attactaagg caattttaat gaattaccat gtatataaaa aaatatctgn       120
cacttggcac acaggtttgt atgtatgtgt atatatatat gtatg                        165
```

```
<210> 301
<211> 438
<212> DNA
<213> Homo sapien

<400> 301
aaaatatatg tatttaaaaa caaaaagcaa cagtaatcta tgtgtttctg taacaaattg        60
ggatctgtct tggcattaaa ccacatcatg gaccaaatgt gccatactaa tgatgagcat       120
ttagcacaat ttgagactga aatttagtac actatgttct aggtcagtct aacagtttgc       180
ctgctgtatt tatagtaacc attttccttt ggactgttca agcaaaaaag gtaactaact       240
gcttcatctc cttttgcgct tatttggaaa ttttagttat agtgtttaac tggcatggat       300
taatagagtt ggagttttat ttttaagaaa aattcacaag ctaacttcca ctaatccatt       360
atcctttatt ttattgaaat gtataattaa cttaactgaa gaaaaggttc ttcttgggag       420
tatgttgtca taacattt                                                      438
```

```
<210> 302
<211> 172
<212> DNA
<213> Homo sapien

<400> 302
ccaaaacagg agtcctgggt gatatcatca tgagacccag ctgtgctcct ggatggtttt        60
accacaagtc caattgctat ggttacttca ggaagctgag gaactggtct gatgccgagc       120
tcgagtgtca gtcttacgga aacggagccc acctggcatc tatcctgagt tt              172
```

89

```
<210> 303
<211> 552
<212> DNA
<213> Homo sapien

<400> 303
ccagcctgtt gcaggctgct tcgtagcggg cgtcggctgc ggacttccct tcccgggtct      60
ggatcttttc atcctaccag atgagaaagg gaatgagtga atggagtgac cccgcaccct     120
gtcactttcc tgagacatga ctgccaggaa gaagagctgc tctggtctcc atcagggctg     180
gcaggacaaa ctgaccagtg agtcagtagg cagagttcac actgaaaaag ggcacaaggg     240
ctgtcccaca atgggaggaa atggggtctc agaacttcta cttctctgaa aactaagaca     300
caattgggac aaccaccacc cccgtgtgag atttctcacc tcgagacagg acaagatgaa     360
gttcacggct tcttctgggg taaagacctt gaagagccca tcacaggcca acaaaatgaa     420
cctacaacac caggagaaa tataaacggg ttttaggccc aaccaaaaaa taaaaaataa     480
aaaaagggcc tggagatgga gataaaataa atatttgtcc aactattcaa aggctaaggt     540
ttttttttct tt                                                        552


<210> 304
<211> 601
<212> DNA
<213> Homo sapien

<400> 304
cctttgattc ttggtagtac attgcatgta aaatgtttat aagaagctac ttttccttca      60
tgggaagaaa ttcccacatg agattcataa attcttagac tccgtggctt ctttggtccg     120
gaatgcttaa actcatatga gtgttctgga tcccagtgta tccaatcata attcacatta     180
tcaccttcac gaaccacata ctttgcccac ggtgaaatac gatacaagat ctctccgctt     240
ttactagtaa taactacctt taatttggat ccatgaggca cgagtacaga tttattctgc     300
tttggtggga tatacagctc ccattttcca taatccagtt ttttgtatgg gtacgaaaat     360
ggattccaac cattaaaatc tccagtaaga aaaactcctt ctgctcccgg ggcccattct     420
ttgcagtata aaccaccatc agcacatctg tggacgccaa atgattcata gcctctggaa     480
aacttatcaa taccaccttc attttctcca atgttcttca aaatttggct aaactgctta     540
tacctgcgct ggaagtccac ggcgtagggc ttcaagtacc ggtcgatctc caggagtctg     600
g                                                                    601


<210> 305
<211> 401
<212> DNA
<213> Homo sapien

<400> 305
aaataacagc atgtaaaata ttaaaataca agctttcaaa aataaataca taaataagta      60
gaaccctcgt aagaaatagt caaacacatt aagtcctttc cagctgtccc tagaaagctg     120
ctgttctctt tttcattttc agctctggta agggcaggga ccaccctgca ggaagtgtca     180
atgatacgct gataagcttc ttacttctct cctgtcagtt ggtgctcccc ctgtgatgag     240
aaaagggtta ctgttgcagg tgctaaggaa ggctgctctt ctgtcactct gaagttgctt     300
ggagggatgt ccccatgcag actctctccc agccctccac tcagggaagg tctgtctgta     360
cccactgcct tctatagcag aaaacttgca ctcctgaatg c                        401


<210> 306
<211> 313
<212> DNA
<213> Homo sapien

<400> 306
aaactgacta tggattcctt gaaggtctgg cagttgttga tgatggcgat catgtactga      60
acgtagcagt gagggtgctg ccgattcctc aggtgctctt ctttatacag ctgcgcttca     120
tctttatatc tgaggacaga caggcttcgg tcagacagca ctaagggcaa catggagctg     180
```

90

```
tttcaaatgc cacgctgacg tcacgcctgg cctgaaattt cacatcacta acatctgacc      240
ggatgagcct ctaaaaataa aacaatcttt agacgatcca gactaatgga aggacagaga      300
ggttgattac ttt                                                         313
```

```
        <210> 307
        <211> 366
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(366)
        <223> n = A,T,C or G

        <400> 307
aaagatgctg ntaatgaaca ttacggacaa ttcatggtgt ggctagttgg taacacttca       60
gctgattttt cttatgagat ggaaaaaaaa aatcagccaa gtaagggcac atcttcactt      120
catttataag tcagcatcca aggtaaaaga attctctgtt ggacttgaca tcactcccat      180
cctctgatac tcgcctactc tcttctcaaa gaagttagnt ctttccttcc antgaaatat      240
tctcataaaa gtcaaatggg ttctctactc tgaaaacctt gctaaaaccc aattccagca      300
taagtttgtc tgncacaaac ncaatgnatt gcttcattaa antgcaattc atcccaatga      360
gcttcc                                                                 366
```

```
        <210> 308
        <211> 534
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(534)
        <223> n = A,T,C or G

        <400> 308
ccagctatca gctgatcgtc ttctgtctgg acgctcgtcc tgcttctgac atcaaaatct       60
tctgtctcaa agtcagagtc atccaactcc tcaggggtcc ttatcatcag cactgctttc      120
ctgatgtccc ggatgccatc atataccagg cgggaagcat cgataaactc attctcatcc      180
atgggctggg cagggtccga gctgagggct tccacggctg cttctacttg ctcagtaaaa      240
cgtggcatga ctgtgttgga gagcagctta gtggcttcca gaaccttctc tgtgtagact      300
cctggctcat agtcgtccat ctctgaggtg actacgtgaa tgacccgggc tgcccggcct      360
cgaattgcac cagctgtgcg gccaggccat ccacatcctt ctcttggaga gcaatgacac      420
atttggtcac atcttccaaa atgtgattct ctgagacagc caagaagtca tcaatggaag      480
taatgncatc gacagcatct gtgagaacac cgacttgttt ttccattgnt cttt           534
```

```
        <210> 309
        <211> 164
        <212> DNA
        <213> Homo sapien

        <400> 309
catactcctt acactattcc tcatcaccca actaaaaata ttaaacacaa actaccacct       60
acctccctca ccaaagccca taaaaataaa aaattataac aaaccctgag aaccaaaatg      120
aacgaaaatc tgttcgcttc attcattgcc cccacaatcc tagg                      164
```

```
        <210> 310
        <211> 131
        <212> DNA
        <213> Homo sapien
```

91

```
            <400> 310
aaaaatcatt tatctttcgg tgcttcaaca tgatgccaaa caaaaatcta ctgaataaaa    60
atagcaagga agggaatcaa acatttataa gatatattta ttatttttct gaccaaagtg   120
caatgatttt t                                                        131


            <210> 311
            <211> 626
            <212> DNA
            <213> Homo sapien


            <400> 311
cctatgtgcg ccagtttcag gtcatcgaca accagaacct cctcttcgag ctctcctaca    60
agctggaggc aaacagtcag tgagagtgga ggctccagtc agacccgcca gatccttggg   120
cacctggcac tcaagcactt tgcacgatgt ctcaaccaac atctgacatc tttcccgtgg   180
agcaacttcc tgctccacgg gaaagaggtc gatggattta cccctggacc cataagtctg   240
ttcatcctgc tgaagtcccc tccccattgc tccttcaagc caaaactaca ctttgctggt   300
tcctgtcccc tctgagaaag gggatagaaa gctccttcct ctatgtcctc ccatcgagat   360
ctgttctggg gatggagctt ccaacttcct cttgcagcag gaaagaatgc tgctcaccct   420
tctgtcttgc agagtgggat tgtgggaggg attggcagcc ttcttctcca ccacctgtcc   480
agcttcctcc tggtcagggc tgggaccccc aggaatatta tgttgccgtg tgtgtgtgtg   540
tgtgtgtgtg tcttcttttta gggagcagga gtgcatctgg taattgaggg tagatgttgt   600
gtgtgctggg gaggggtcct tctgtt                                        626


            <210> 312
            <211> 616
            <212> DNA
            <213> Homo sapien


            <400> 312
aaaccaaaga aattaagaaa aaagacttca ttgcttgaat gacgcgaaca gctgtctgag    60
tcacctagac tttaacacca cctggggccc tgggaatgac gctgacgaga gatctgcaca   120
tagtaggcgt gggctccaaa tgtgctcatc agctgacttc acatcctcac aagtcagcct   180
cagatatgac ccaagggata cgtaccatct cttcttgaaa cagcgtgtca aattatatat   240
atgtatgcaa aaaagagtaa tgtactaagc aaaccaagtt tcgtcttttt cttctgaatc   300
tggttttaat gtgacctgtc atccccatct ttcgaattta tgagctccat cttctctaga   360
ctgttaactt cttgaggaaa acatgctatt ttaccacctt tcactgctga atccctagcc   420
cttaagcaca gtctctggca cagaataaat acgaaatgaa tgagtgaatg aatggatgga   480
tgggtgaaga gaaaaggcaa tgcacaagat ttacctatca aaatccacca atggtcctta   540
aaaatggttt tgtcagtaga gatgctgaat atattcatat aatacattta tttcaatact   600
attaagaatt ctagtg                                                   616


            <210> 313
            <211> 553
            <212> DNA
            <213> Homo sapien


            <400> 313
aaaaaatggc agcattgtac ttgaatcaga aagcttactg ggatttcctc atcgaaagta    60
gagattgcag ctaatcctag taccttttgt tagtaattac ttaaggcaca gtgcaaagtt   120
gaaggactgt tttggtacaa actcaagcca gctacatgta tgcttgcctt ggtatccttg   180
ctagagcaca tgcgggtata ataccgtatt atacacaaca aggccaccct gttgtatctg   240
tgttacaatt aaacatcagt cccagaaagt gaaccctagt catttattat aggtgcccac   300
ctctgacttg gaacaaaatg ccactccatt catgttcatt tttgtcctgg agaggattta   360
tttcctaaaa gattctgaaa gccaacaaat caatgtagtt cttcatagag aacttaagag   420
taaggctcaa aatggcctca aaatgggctt cttggatgac ttccaacagt gactggcctt   480
ctcaacactg cagatgtctg agcactacca taacctaacg aagtgaggaa ggaggaggca   540
aattggtatt ttt                                                      553
```

<210> 314
<211> 330
<212> DNA
<213> Homo sapien

<400> 314

```
ccagcgactc cagcggtggc agcaggcagt gcacgtactc tgggcctccc accagggtag      60
tgaaggttcc cagctgttct gccagggcca ggaggacctc atcttcatca tagatggtat     120
ctgtaaggaa aggcagaagc tcacttcggg tcctttcaac cccaagggcc aaggcgatgg     180
tggacagctt cttgatgctg ttgaggcgaa gctgaacgtc ctcattgcgg agttcgtcta     240
tgagcaccgc gatggggtac agcgagtcgt cgccgtcggc cgccgccatc ttggctccgt     300
ccctttcctg tcagactgcg gccagcgctg                                     330
```

<210> 315
<211> 380
<212> DNA
<213> Homo sapien

<400> 315

```
aaaaatgaca ttgcgtttag cttattgtaa gaggttgaac ttttgtattt tgtaactatc      60
tttaagccct tcagtttata attcatataa aatgcctttt gtatttaaaa taatcctatt     120
ttaatcagtg catgaaattt gcttttttaa agttcatttg aatgattatt ccttccctct     180
aaagaaatga ttttggtaat gttgagaggt accttaccac aaatcctaac tgtaagtgta     240
ttcatggtta ttttcaaaag aattatgact cttccccaaa agaatcctaa aaaacttgta     300
ataaacctat aaagctgatt tgcatattta caaaattttg aatagcaaat ataggcaact     360
catatatgta tataattttt                                                380
```

<210> 316
<211> 222
<212> DNA
<213> Homo sapien

<400> 316

```
aaactacaga gggttttcca gctattattt cctttagttt ctaaaagtaa cgacttatat      60
taatgtttta taaaagatag tgatgaaaaa aaggtaatgc tgaaataaag gcgctttttag    120
aaatatttaa ggacaacata aggtattaat attggaaaaa aactgtacat attttcaagc     180
acaacactga aatattgcag cagtgtttaa ctgaattgtt tt                        222
```

<210> 317
<211> 490
<212> DNA
<213> Homo sapien

<400> 317

```
ccttgaatga gcgtggagag cgattaggcc gagcagagga gaagacagaa gacctgaaga      60
acagcgccca gcagtttgca gaaactgcgc acaagcttgc catgaagcac aaatgttgag     120
aaactgccta tcctggtgac tcttcttaag agaaactgaa gagtttgttc agcagttttt     180
acaagaattc gggacctccg cttgcttctt ttttccaat atttggacac ttagagtggt      240
ttttgttttt tcttttcaga tgttaatgtg aaagaaaggg tgttgcattt ttacatttcc     300
ctaatgatct tgctaataaa tgctacaata gcatcggctt cattttgggt ttttgcctcc     360
tcccactgtg tgtatgtgtg tatatgtatg ttttgaatat gttttcttta ttaaaaaata     420
ttttttgtag tttgaatatg aaatttggac caaatgataa actgcgctga gtctaaactg      480
gcaacatgta                                                          490
```

<210> 318
<211> 340
<212> DNA

93

```
<213> Homo sapien

<400> 318
cctggagtcc aataaccacc ccctcatacc acaccctgtg catacaccag ccaagccttt     60
cctggtctgg gaagggaaga gaaaaaagac gcaggccacc tgggggttct gcagtctttg    120
gtcagtccag ctttctatct tagctgcctt tggcttccgc agtgtaaacc ttgcctgccc    180
ggaggcagga ggcccagctg gacctccgag ggccatgagc aggcagcagc catcttggcc    240
tcaagcttgc ctttcccttg agtccctctc tcccctcggc tctagccaga ggtgtagcct    300
                                                                     340.
gcagatctag gaagagaaga gctggggagg aggatgaagg
```

```
<210> 319
<211> 373
<212> DNA
<213> Homo sapien

<400> 319
aaagatgctg ttaatgaaca ttacggacaa ttcatggtgt ggctagttgg taacacttca     60
gctgattttt cttatgagat ggaaaaaaaa atcagccaag taagggcaca tcttcagttc    120
atttagaagt cagcatccaa ggtaaaagaa ttctctgttg gacttgacat cactcccatc    180
ctctgatact cgcctactct cttctcaaag aagttagtct ttccttccag tgaaatattc    240
tccataaagt caaatgggtt ctctactctg aaaaccttgc taaaacccag ttccagcata    300
agtctgtctg ccacaaactc aatgtattgc ttcattagag tgcaattcat gccaatgagc    360
ttcacaggca agg                                                       373
```

```
<210> 320
<211> 509
<212> DNA
<213> Homo sapien

<400> 320
aaaaacaaaa ttaaattttc atttcaatta agaccccttt tggcattttg cttacttatt     60
ctgccctttg gttaacagca tcagcatcac attactattt tatattgcat atatgtagca    120
tttgcttcct taagttttca acatatcatt tatatttaaa ggcagacact gagtcagtat    180
taatagatta actaaactgc actgtaattt agataaaatt actgtgtctc actgtgtatt    240
acatgcaaaa tccacataaa ttgtcattta accaacagta ctgcacgagc gaacatctcg    300
atatatgaaa actgcatcat caattcaacg ttttggtact tgaaactgca tcataaatgc    360
aacattgtca tatgtgaaaa cgacacccta agtccttctt tttaaaaatg acattgcgtt    420
tagcttattg taagaggttg aacttttgta ttttgtaact atctttaagc tcttcagttt    480
ataattcata taaaatgcct tttgtattt                                      509
```

```
<210> 321
<211> 617
<212> DNA
<213> Homo sapien

<400> 321
ccaaggcccc ttttgcagcc cacggctatg gtgccttcct gactctcagt atcctcgacc     60
gatactacac accgactatc tcacgtgaga gggcagtgga actccttagg aaatgtctgg    120
aggagctcca gaaacgcttc atcctgaatc tgccaacctt cagtgttcga atcattgaca    180
aaaatggcat ccatgacctg gataacattt ccttccccaa acagggctcc taacatcatg    240
tcctccctcc cacttgccag ggaacttttt tttgatgggc tcctttattt ttttctactc    300
ttttcaggcg cactcttgat aaatggttaa ttcagaataa aggtgactat ggatataatt    360
gagccctctg gtccaggtct cagtttacct aatattacct cagaaaggat atggagggaa    420
gatgatcttt ttgccaggtc tgactttttct tcctgctccg ccctccatta acgctcagta    480
cccttagca gctgacggcc ccacgttcta ctccatgctt ggcttccttt ccaactagct    540
ctttcatata ttttacttgc tagtatctcc attctctcta aagtagtggt tctttttgcc    600
cttaaactta aatttttt                                                  617
```

```
<210> 322
<211> 403
<212> DNA
<213> Homo sapien

<400> 322
aaaaagaagg acttagggtg tcgttttcac atatgacaat gttgcattta tgatgcagtt      60
tcaagtacca aaacgttgaa ttgatgatgc agttttcata tatcgagatg ttcgctcgtg     120
cagtactgtt ggttaaatga caatttatgt ggattttgca tgtaatacac agtgagacac     180
agtaatttta tctaaattac agtgcagttt agttaatcta ttaatactga ctcagtgtct     240
gcctttaaat ataaatgata tgttgaaaac ttaaggaagc aaatgctaca tatatgcaat     300
ataaaatagt aatgtgatgc tgatgctgtt aaccaaaggg cagaataaat aagcaaaatg     360
ccaaaagggg tcttaattga aatgaaaatt taattttgtt ttt                      403


<210> 323
<211> 298
<212> DNA
<213> Homo sapien

<400> 323
ccagaattag ggaatcagaa tcaaaccagt gtaaggcagt gctggctgcc attgcctggt      60
cacattgaaa ttggtggctt cattctagat gtagcttgtg cagatgtagc aggaaaatag     120
gaaaacctac catctcagtg agcaccagct gcctcccaaa ggaggggcag ccgtgcttat     180
attttttatgg ttacaatggc acaaaattat tatcaaccta actaaaacat tccttttctc     240
tttttttcctg aattatcatg gagttttcta attctctctt ttggaatgta gattttttt      298


<210> 324
<211> 78
<212> DNA
<213> Homo sapien

<400> 324
ccatgggaag gtttaccagt agaatccttg ctaggttgat gtgggccata cattcctttta     60
ataaaccatt gtgtacat                                                   78


<210> 325
<211> 174
<212> DNA
<213> Homo sapien

<400> 325
ccatcatggt caggaactcc gggaagtcaa tggtcccgtt cccatctgca tccacctcat      60
tgatcatatc ctgcagctct gcttcagtgg ggttctgtcc cagggatctc atcactgtcc     120
ccaactcctt ggtggtgata gtgccatctc catccttgtc aaagagggag aagg           174


<210> 326
<211> 679
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(679)
<223> n = A,T,C or G

<400> 326
aaaactgaaa tacctcttaa aataatttga tccccagcgt ttgctctttt tgaagtaacc      60
aacttactct taaaaaggat ggntgccaag atggaaagtc ttactgggtt ttcatgttaa     120
```

```
cctattcttt ggacataact atgaattttg tatacaatgc acttcatgaa aagttgtggc    180
tcccccagat tgcccacaag tgtgatcttg aagtcctaaa catttgtcca tgtaagcttc    240
aaaacagcgt taactgagtt attcaagtag cagtacttaa agatacaatt cttgaagcag    300
tttcaatggt ttctgatcca aataatcagt ttctgaacat tactacttca cataatagag    360
tccatcttca gtttcttctc actttctctt tcccttttgg gtttcctttt tgtggcctga    420
ggccaccagt ctttgggta ctatcaagat acttccatca tgggtacact ggagagcata    480
gtggttggga ttgactggcc taccttggtc atctcttaat ctactaaaaa tatcatgata    540
aaggtcatgc agtttctgtt tcattatgtt aatagctttg gtacattgtg cttgctctct    600
cttaanagtt tccttctttg cttgcaagtt acatacatca tcttctaaat tcaaaattat    660
                                                                     679
gtccattttg gcgtttacc
```

```
<210> 327
<211> 619
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(619)
<223> n = A,T,C or G

<400> 327
aaaataagtt actggtaaat ggagttgcat tctatagtca cttaataaat attaacaaaa    60
tatttataac tggaacctta atgaaatgta tcatcaaatc aggtaaaagc aacttgtccg   120
cagttaccaa agcctanata cgcgttagat gcgccttttc cggcctgtgc gtctgctctg   180
gttcctctca ggcagcaaag ctggggaagg aagctcaggc aggagcctcc ccgacgccac   240
aacggcacaa gcagcagcta aagcaccgca ctttgctcta ctaacctttt acttaaatga   300
ggttttgcca aatccacatc tggaaccgcg tcacacccat ttgcaaggat gtttgttctt   360
tgatgaaact gcatctctac tgcacatgag ggctttcatt gtaggacaag aggagagttc   420
gtttattttt gtaactgttt tacatgttcc gattagttaa tcggtagctt atgtcatttg    480
ctatgcctgn agncttctaa tctctcctta ctaaacatt acttcaaatt tgaattgacc    540
cttggttata atttatttag ccgggatttg tgtgtcattg tagagcaact ctaattcaag   600
aatagtgaca acttttaag                                                 619
```

```
<210> 328
<211> 132
<212> DNA
<213> Homo sapien

<400> 328
aaatccaaat acaaaagcat agtctctgca agatttgtt ctttgaattt cttgatattg     60
taattgatta ttgataactg tcatcatgaa attatctctc aataataaga taaataaact   120
agcatatgaa tc                                                        132
```

```
<210> 329
<211> 854
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(854)
<223> n = A,T,C or G

<400> 329
ccttgaggta actattgcaa aaatatacagt gtaagttcag tctgatggaa accccagatt    60
catcaaggat acaaatctac agtagcccaa tggcggtttc atagtgtata atttattatc   120
aataaaatta actccgttac aatcagcatt catttcctcc aattaaaatt aagcataaac   180
```

```
cctaggtagt aaccttctgc acatatgtat agctccgaat ttcctcactg ttcgtctggt        240
gcaaaaacaa tattcaagct tgtctgatta tgcatatttt ctttaatcat atagattata        300
tatacaatag acaagacagg actatataga taatggacag acttaaatgc ccgcattttt        360
aaggtggaga aaatgatgaa tctatgcatc cccgagaaca cttaaaattt tttttattt        420
cactgggaaa ttcttacagc tactttacaa tcataggtta acagcctagt tatacagaag        480
acatattcca ctacagagct atactctatg caactgtttt ttcccctcat aaacaacctg        540
agttcaaatt gaattctatc ttccacaatc acaatgggtg catcacccag tacacagaag        600
tttgaatcac aaaacataat taccacaata aaacacagtg ttcaagtatc ttggcagagc        660
aatctgccgc acaaactgca aattaaatta actacacaga ctaaaaacta tacagcctac        720
catcacagtt gtgcattata aaaaagggag tttctttcct ttggttttaa gtcaggaaca        780
gggtaggatt ttttaccctc nggccgggga ccacgctaaa ggggcgaaat ttcttgccan        840
natattccnt tcac                                                          854


        <210> 330
        <211> 299
        <212> DNA
        <213> Homo sapien


        <400> 330
ccaatgaata actgacttta taatcctggg caatcagctt ttggcgggtt gtaagtgctt        60
ctcgacactt ttcactcatg gattcttcaa atttatggtt aaagaggcac ttatacactc        120
tgccctcacc agcttgtgta ttttcacaaa aacgctcccg atcatctcgg caagcaaaat        180
ataaatgccg gtctaagtga aagtcatccg atgacagctc agccacccgg agaatggctt        240
tcttgcagag ttcagaaact tgaatcttgg gttctctttc ttctgcttct ttcaccagg        299


        <210> 331
        <211> 573
        <212> DNA
        <213> Homo sapien


        <400> 331
aaagatatga acagcttaat tttccgtgtg attatctaat taaaaaagaa aaacaaaaca        60
agcaaaatgt tcaagttaaa aaaaaaacat accgggtgag caatgcacta aaattatcca        120
catgaaaaca aatggtctgt aatcttataa accaacatag catttcactg tcaacaatgt        180
gaaaatttaa tatcttctca aacaggcata agatgaagaa gtgctatttt ttaattgtaa        240
aaggaactta tgtaatgtaa aattacatta taatttttca ttccgaattg acaaatgatt        300
tcaaaaacaa ggatcaaagt ttgactgcaa atagtaatgc aatataattt cataaaaatc        360
cttcaatttc tattttttc cttttctgta gttgacatat gaagaccact tcaatttcta        420
aaaaagggaa ccattccaat tttccctccc caagaaaatg tctcacaatt acaaagtaga        480
aaaacagccg ttcataaatg caaaaaaatt ctgatttata tatgaaataa tttctagatc        540
aattcaacat atttgatgac atttgttgag ttt                                     573


        <210> 332
        <211> 555
        <212> DNA
        <213> Homo sapien


        <400> 332
aaatttgaaa gttgtaagca ctgatgttaa tgtgattgat cagcatgggc atatgtaaaa        60
tgtccttttc tggttgcctc tctatgctat tgtgttcaga tacttacacc ataattaaac        120
agtaagttat agacttgctg agtttggcat agatagtgcg ctcatttaat ctgtgcctct        180
caaaacttca gaatattagc atattaccac aaataatttt tggtgaaact attgagatat        240
taaaattttt gaaatcacta ctgttacctg ttatagaaaa tagtgttggc ttagtctagt        300
ctctgtgtaa ctggttacat tttgatggtt gtctatactc aactggatat gtgtatgtaa        360
attagaaaat acatacctat ccagacataa atgctaagta acattttttt cttcctccaa        420
ctacataatt tgtagctcat cattttttct taatcctttc ctaacttgtc gcagcagttt        480
gaatttccca gatatttatg tttgaacata atggctcaga atacatattt gaacatcata        540
gttgtatata ttttt                                                         555
```

```
<210> 333
<211> 460
<212> DNA
<213> Homo sapien

<400> 333
aaatttcttt caacagtcta ttggggtcca aaaagcatat atcaaaacaa aaataacaaa       60
agcaaaacaa aatgctacat gtaaaagcta aagaaagaaa atgcagcata ttcaggttct      120
ttttcttgag gtacctatat aaatttaatc acctgcccca aagtcctctc gttaggttaa      180
aaacacaatg cgtcctgggg agccaattgc ccggcacgtc ttattactga gaaagtgcaa      240
gaatgctgat catcttatgc agcatactaa aggatgattt actctttaca aaatagagct      300
taagtatcaa cctgatggaa gttagaaaat taaaaacatt taagtagaat catctctctc      360
tctatttttg agatcctgca gcaaaaagcc tcccaaatca actttcaaag ttctgccatt      420
aaggaatgtt ggttctcttg taaaattcag agatctcttt                           460


<210> 334
<211> 190
<212> DNA
<213> Homo sapien

<400> 334
ccaaggaagg ctgtgctcta gcccatctga ccctgtctgc aaaccacctg ggggacaagg       60
ctgatagaga cctgtgcaga tgtctctctc tgtgcccctc actcatctca ctggatctgt      120
ctgccaaccc tgagatcagc tgtgccagct tggaagagct cctgtccacc ctccaaaagc      180
ggccccaagg                                                             190


<210> 335
<211> 394
<212> DNA
<213> Homo sapien

<400> 335
aaatttggac agacttctag cggacagtta cttctcaaga attttctata caaaagctgt       60
gccaggcata tattttctca ccaggacaca tggggcagcg gacccctggt gtcagtaaga      120
acacacccag aatgatataa ccagatattt ttcagtttct aaattaaggc atattcaaaa      180
aattccatgt acaagtttac accacttttc taagttactc accaggtaat taaagcagat      240
tcacagatga attactctca gtttaactat atgcaacaac catgccaata acttttcttc      300
taaattttgc ataataatgg ttaaaaaaag tggtagttta actatcatgt tcacaattgt      360
cattttttcaa ggcagtagaa gaccaagaca tttt                                 394


<210> 336
<211> 429
<212> DNA
<213> Homo sapien

<400> 336
aaaagctatc accattgtag tagaatcatc cttctttttt gaaatttgaa gcatcccagg       60
cttaaaatct tgtgtttcag aaagacagtt tataccatga ctgcttaatt atccccccaa      120
agaccttctg attgaagtca tgtacagttc agtggcctaa attctctgcc ttttaactt      180
gctttgcaag cctactctga aaataagtta tttagtcaag ttattctcaa agatgtccca      240
gttgcctaga aaggatcaaa tggaacattt gacacacata ctcaaaaaaa tgtaactgac      300
tataaacact ttaacctaat catctgtatc aaactttcta aaaatcaaat ctcaggattg      360
ttccacttta gagattctat gtaaagttta tataactata cttgtcaaat agcacctatc      420
tatgcattt                                                              429


<210> 337
<211> 373
```

98

```
        <212> DNA
        <213> Homo sapien

        <400> 337
aaagatgctg ttaatgaaca ttacggacaa ttcatggtgt ggctagttgg taacacttca          60
gctgattttt cttatgagat ggaaaaaaaa atcagccaag taagggcaca tcttcagttc         120
atttagaagt cagcatccaa ggtaaaagaa ttctctgttg gacttgacat cactcccatc         180
ctctgatact cgcctactct cttctcaaag aagttagtct ttccttccag tgaaatattc         240
tccataaagt caaatgggtt ctctactctg aaaaccttgc taaaacccag ttccagcata         300
agtctgtctg ccacaaactc aatgtattgc ttcatcagag tgcaattcat cccaatgagt         360
ttcacaggca agg                                                            373

        <210> 338
        <211> 366
        <212> DNA
        <213> Homo sapien

        <400> 338
ccatcccctt atgagcgggc gcagtgatta taggctttcg ctctaagatt aaaaatgccc          60
tagcccactt cttaccacaa ggcacaccta cacccttat ccccatacta gttattatcg          120
aaaccatcag cctactcatt caaccaatag ccctggccgt acgcctaacc gctaacatta         180
ctgcaggcca cctactcatg cacctaattg gaagcgccac cctagcaata tcaaccatta         240
accttccctc tacacttatc atcttcacaa ttctaattct actgactatc ctagaaatcg         300
ctgtcgcctt aatccaagcc tacgttttca cacttctagt aagcctctac ctgcacgaca         360
acacat                                                                    366

        <210> 339
        <211> 319
        <212> DNA
        <213> Homo sapien

        <400> 339
ccttccctcc ccaccaccat caacctcttc aaaacctact ccctccctct aagtatctct          60
caacacagta tgtctggggc tagatttcaa aacccacgta atgaaaaagt cagttttaca         120
agcctaattt tgttgttttt tttttttatat caattaacgt taaaaattgc atcaactatt        180
taattcatga ggatctttca tattaaaatt taaccttaag attcaaccgc catgtgcttt         240
tataaaggaa acattttta gagacgtctg agctcacttt tacatggtgg tgcctactgc         300
cgttaatgtt tgtgatttt                                                      319

        <210> 340
        <211> 278
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(278)
        <223> n = A,T,C or G

        <400> 340
ctaataaaat gaattaacca ctcattcatn natctaccca cccnatccaa catctccnca          60
tgatgaaacn ncggctcact ccttggcgcc tgcctgatcc tccaantcac cacaggacta         120
ttcctagcca tgcactactn accagacncc tcaacngcct tttnatcaat nggncacatn         180
actcganacn taaatnatgg ctgaatcatc cgctacctnc acgccaatgg cagcctcaat         240
attctttatg ctgcctcttc ctacacatgc gggcgagg                                 278

        <210> 341
        <211> 400
```

<212> DNA
<213> Homo sapien

<400> 341

```
ccagcatggg gctgcagctg aacctcacct atgagaggaa ggacaacacg acggtgacaa    60
ggcttctcaa catcaacccc aacaagacct cggccagcgg gagctgcggc gcccacctgg   120
tgactctgga gctgcacagc gagggcacca ccgtcctgct cttccagttc gggatgaatg   180
caagttctag ccggtttttc ctacaaggaa ttcagttgaa tacaattctt cctgacgcca   240
gagaccctgc ctttaaagct gccaacggct ccctgcgagc gctgcaggcc acagtcggca   300
attcctacaa gtgcaacgcg gaggagcacg tccgtgtcac gaaggcgttt tcagtcaata   360
tattcaaagt gtgggtccag gctttcaagg tggaaggtgg                         400
```

<210> 342
<211> 536
<212> DNA
<213> Homo sapien

<400> 342

```
aaagaacaat gggaaaaaca agtccgtgtt ctcacagatg ctgtcgatga cattacttcc    60
attgatgact tcttggctgt ctcagagaat cacattttgg aagatgtgaa caaatgtgtc   120
attgctctcc aagagaagga tgtggatggc ctggaccgca cagctggtgc aattcgaggc   180
cgggcagccc gggtcattca cgtagtcacc tcagagatgg acaactatga gccaggagtc   240
tacacagaga aggttctgga agccactaag ctgctctcca acacagtcat gccacgtttt   300
actgagcaag tagaagcagc cgtggaagcc ctcagctcgg accctgccca gcccatggat   360
gagaatgagt ttatcgatgc ttcccgcctg gtatatgatg gcatccggga catcaggaaa   420
gcagtgctga tgataaggac ccctgaggag ttggatgact ctgactttga gacagaagat   480
tttgatgtca gaagcaggac gagcgtccag acagaagacg atcagctgat agctgg       536
```

<210> 343
<211> 646
<212> DNA
<213> Homo sapien

<400> 343

```
aaaacttcta ttcatcaaaa gacataaaga aaacagtcaa gccacagact aggtgtaata    60
tctcaataca tatatccgac aagagaattg catctagaat gtataaagaa tttctatgac   120
ccaattatag ctatcaggga tatacaaatt aaaaccaaaa tgaaacatca ctacacaccg   180
attggaatgg ttaaaaagga aaaatactga caacaccaat atttgtaaag acaggaggta   240
ccagaactct cattcattat attcataaat tgacaaatat aaaaactgct atagtagggc   300
agtcttcctt agaaagggat tgtgggcatg acagagaaca atattaatct gtccattata   360
ttccttaact gtaaaatgga gaccatatgt tccaccagct tcacttggta attatgatac   420
atggctatta agagactcaa atgactccat ttcatcaact aatatgccct gtcaattcta   480
cttctaaagt atcccatgtt ctatccaatg tcataccact atcataattt aagtgttcat   540
aactctctat aatatttcaa taatctaact ggtctcaatg cctgtagtag aaattgcaga   600
ttgggctccc caatttctgt tccctaggaa ggctgagaaa gctttt                  646
```

<210> 344
<211> 383
<212> DNA
<213> Homo sapien

<400> 344

```
cctgcacccc agtataaggg cctccccagc tgagtaagaa gctgcttccc ctcctctcat    60
aggccaagcc tattgtgtga aaccatctca tggtcttggt gacgtagacc attttttgaaa  120
ccgtctcatg gtcttggtga cgtagaccgt ttgcttcttt aactccagcc gcggaatgac   180
attagtggaa ccgggctagg gaactgctgg aagttcagga tgccaccacc ttgaacacct   240
aggccaggga tccccaccat gtcccgggtt tctttcttcg agagtataga accgttcatt   300
cttgctttgt gtcccattcc atctcttgaa aaaatgtagt ctttgaatgt gtgaaaatct   360
```

100

aggggacattc aatctagtct ttt   383

        <210> 345
        <211> 263
        <212> DNA
        <213> Homo sapien

        <400> 345
cctcccttc cctttgctg gtgggaggag ctcgtgtgct ccttggccgc ttactggaag   60
ggcgttttc agagctgcag ggacagggtg agcagctgaa gggctaggag ggaagccggc   120
ccccgctctg cagaagctgc atttcagctg aatctgtgtt tcagcctcag ttggttgcac   180
cgttagcccc tctcctcccg gatggtcatg tttttgtcac attagagaat aaacagccac   240
acacacattt ttttttttcc ttt   263

        <210> 346
        <211> 132
        <212> DNA
        <213> Homo sapien

        <400> 346
aaatccaaat acaaaagcat agtctctgca agattttgtt ctttgaattt cttgatattg   60
taattgatta ttgataactg tcatcatgaa attatctctc aataataaga taaataaact   120
agcatatgaa tc   132

        <210> 347
        <211> 564
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(564)
        <223> n = A,T,C or G

        <400> 347
cctgggtatc cagggaggct ctgcagccct gctgaagggc cctaactaga gttctagagt   60
ttctgattct gtttctcagt agtcctttta gaggcttgct atacttggtc tgcttcaagg   120
aggtcgacct tctaatgtat gaagaatggg atgcatttga tctcaagacc aaagacagat   180
gtcagtgggc tgctctggcc ctggtgtgca cggctgtggc agctgttgat gccagtgtcc   240
tctaactcat gctgtccttg tgattaaaca cctctatctc ccttgggaat aagcacatac   300
aggcttaagc tctaagatag ataggtgttt gtcctttac catcgagcta cttcccataa   360
taaccacttt gcatccaaca ctcttcaccc acctcccata cgcaagggga tgtggatact   420
tggcccaaag taactggtgg taggaatctt agaaacaaga ccacttatac tgtctgtctg   480
aggnagaaga taacagcagc atctcgacca gcctctgcct taaaggaaat ctttattaat   540
cacgtatggt tcacaagata attc   564

        <210> 348
        <211> 321
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(321)
        <223> n = A,T,C or G

        <400> 348
gcncatgaac anggagcaac ganaagagat gtcgggctaa gggcccggga cgggcggcac   60

101

```
ccatcctgcn acggaacacn ttcgggttnt ggttttgatt ngttcacctc tgtttatatg     120
canctatttg ntcctcctcc cccaccccag nccccaactt catgcttntc ttccgcnctc     180
agccnccctg ccctgtcctc gcggtgagtc antgaccacn gnttcccctg cangagccgc     240
cgggcgtgag acncngaccc tcnntgcata caccaggccg ggcccnngct ggctcccccn     300
gnggccctgt gaaanagctg g                                              321
```

```
    <210> 349
    <211> 255
    <212> DNA
    <213> Homo sapien


    <400> 349
ccatgacagt gaaggggctg ttaggaatat caacaccacc gaagcgcaca tagatcacat      60
atgtgcccgg cttggcagct gtgtagaaga tgtcataggt tccatcttca ttctcaatga     120
catcggcctc ggcctcagtg ccatctgggg tcagaaccgt gcaggtcact ttacccttcc     180
cggcagtctt ggcatcaacc acaaagccta cttcttcgcc agttttcaca gtggaggcga     240
ttccaggacc cgtag                                                     255
```

```
    <210> 350
    <211> 496
    <212> DNA
    <213> Homo sapien


    <220>
    <221> misc_feature
    <222> (1)...(496)
    <223> n = A,T,C or G


    <400> 350
gggcttattn gctcacaaaa tcattcnctt ttggaactat ggccaattga agctacacac      60
tgaatttatt aatacagcat taagtttctt tgtgtnaaaa aatctttgtn cncagtaata     120
aaaaaagata aggcaagatg cattaaacat gaaaccttct ggctcttttc ctctgcgttt     180
ttacagagcc actgatgact atctgcaaca aaagagttaa gtttctgatt ttccgtatca     240
agcatcttat gcctttgctg tggtaagaat tctggccaag caccctgaag gacagatgct     300
ggtgatggnc tttggcactt atgctggcaa actgagcttc tttcccttga gtacttttgn     360
aatgtacaag tagaagaagt cacaagtata ggatggtctg gactacgccg gccaccacag     420
caatgaggtc aaagaagccc tcaaagnaga agcgnccaga tccagttgac aagatacaaa     480
gcacgataga ggccca                                                    496
```

```
    <210> 351
    <211> 109
    <212> DNA
    <213> Homo sapien


    <220>
    <221> misc_feature
    <222> (1)...(109)
    <223> n = A,T,C or G


    <400> 351
ccatagtgaa gcctgggaat gagtgttact gcagcatctg ggctgccanc cacagggaag      60
ggccaagccc catgtagccc cagtcatcct gcccagcccc gcctcctgg                 109
```

```
    <210> 352
    <211> 384
    <212> DNA
    <213> Homo sapien
```

102

```
      <400> 352
ccttcgagag tgacctggct gcccaccagg accgtgtgga gcagattgcc gccatcgcac     60
aggagctcaa tgagctggac tattatgact cacccagtgt caacgcccgt tgccaaaaga    120
tctgtgacca gtgggacaat ctggggggcc taactcagaa gcgaagggaa gctctggagc    180
ggaccgagaa actgctggag accattgacc agctgtactt ggagtatgcc aagcgggctg    240
caccecttcaa caactggatg gaggggggcca tggaggacct gcaggacacc ttcattgtgc    300
acaccattga ggagatccag ggactgacca cagcccatga gcagttcaag gccaccctcc    360
ctgatgccga caaggagcgc ctgg                                           384


         <210> 353
         <211> 345
         <212> DNA
         <213> Homo sapien

         <220>
         <221> misc_feature
         <222> (1)...(345)
         <223> n = A,T,C or G


         <400> 353
ccttggtcag gatgaagtng gctgacacac cttagcttgg ntttgcttat tcaaaagana     60
aaataactac acatggaaat gaaactagct gaagcctttt cttgttttan caactgaaaa    120
ttgnacttgg ncactttttgt gcttgaggag gcccattttc tgcctggcag ggggcaggta    180
tgtgccctcc cgctgactcc tgctgtgtcc tgaggtgcat ttcctgttgn ncacacaang    240
gccangntcc attctccctc ccttttcacc agngccacan cctnntctgg aaaaangacc    300
agnggtcccg gaggaaccca tttgngctct gcttggacag canag                    345


         <210> 354
         <211> 712
         <212> DNA
         <213> Homo sapien


         <400> 354
ccatctacaa tagcatcaat ggtgccatca cccagttctc ttgcaacatc tcccacctca     60
gcagcctgat cgctcagcta gaagagaagc agcagcagcc caccagggag ctcctgcagg    120
acattgggga cacattgagc agggctgaaa gaatcaggat tcctgaacct tggatcacac    180
ctccagattt gcaagagaaa atccacattt ttgcccaaaa atgtctattt ttgacggaga    240
gtctaaagca gttcacagaa aaaatgcagt cagatatgga gaaaatccaa gaattaagag    300
aggctcagtt atactcagtg gacgtgactc tggacccaga cacggcctac cccagcctga    360
tcctctctga taatctgcgg caagtgcggt acagttacct ccaacaggac ctgcctgaca    420
accccgagag gttcaatctg tttccctgtg tcttgggctc tccatgcttc atcgccggga    480
gacattattg ggaggtagag gtgggagata aagccaagtg gaccataggt gtctgtgaag    540
actcagtgtg cagaaaaggt ggagtaacct cagcccccca gaatggattc tgggcagtgt    600
ctttgtggta tgggaaagaa tattgggctc ttacctccca atgactgccc tacccctgcg    660
gaccccgctc cagcgggtgg gggattttct tggactatga tgctggggga gg            712


         <210> 355
         <211> 385
         <212> DNA
         <213> Homo sapien


         <400> 355
cctcatagcc gcttagcaca gttacagaat gtctgaaggg gacagtgtgg gagaatccgt     60
ccatgggaaa ccttcggtgg tgtacagatt tttcacaaga cttggacaga tttatcagtc    120
ctggctagac aagtccacac cctacacggc tgtgcgatgg gtcgtgacac tgggcctgag    180
ctttgtctac atgattcgag tttacctgct gcagggttgg tacattgtga cctatgcctt    240
ggggatctac catctaaatc ttttcatagc ttttctttct cccaaagtgg atccttcctt    300
aatggaagac tcagatgacg gtccttcgct acccaccaaa cagaacgagg aattccgccc    360
```

385

cttcattcga aggctcccag agttt

```
        <210> 356
        <211> 347
        <212> DNA
        <213> Homo sapien

        <400> 356
aaatgagata aagaaagtct ccttttgttt ttagatggaa aagaaagcac aagttttttc     60
tacctgtgaa tgaactttgg tgacctatat gtgccattca tgcagcattt ttgttcatat    120
tggcttagaa ttcagtgcat gaatatcatt acattcttat atctaacatt cctagttagc    180
tttgattcaa aatatacaaa atctgataca tgaatacttt gctagattaa tgacttgatc    240
atctttggaa tgagtaggca agacgatttt tacctattat ttctatgttg tgggtaatgt    300
taaaactaaa tacagatgat aataattgct atttcacagt gatgttt                  347

        <210> 357
        <211> 313
        <212> DNA
        <213> Homo sapien

        <400> 357
aaagtaatca acctctctgt ccttccatta gtctggatcg tctaaagatt gttttatttt     60
tagaggctca tccggtcaga tgttagtgat gtgaaatttc aggccaggcg tgacgtcagc    120
gtggcatttg aaacagctcc atgttgccct tagtgctgtc tgaccgaagc ctgtctgtcc    180
tcagatataa agatgaagcg cagctgtata aagaagagca cctgaggaat cggcagcacc    240
ctcactgcta cgttcagtac atgatcgcca tcatcaacaa ctgccagacc ttcaaggaat    300
ccatagtcag ttt                                                        313

        <210> 358
        <211> 403
        <212> DNA
        <213> Homo sapien

        <400> 358
aaaaagaagg acttaggggtg tcgttttcac atatgacaat gttgcattta tgatgcagtt     60
tcaagtacca aaacgttgaa ttgatgatgc agttttcata tatcgagatg ttcgctcgtg    120
cagtactgtt ggttaaatga caatttatgt ggattttgca tgtaatacac agtgagacac    180
agtaatttta tctaaattac agtgcagttt agttaatcta ttaatactga ctcagtgtct    240
gcctttaaat ataaatgata tgttgaaaac ttaaggaagc aaatgctaca tatatgcaat    300
ataaaatagt aatgtgatgc tgatgctgtt aaccaaaggg cagaataaat aagcaaaatg    360
ccaaaagggg tcttaattga aatgaaaatt taattttgtt ttt                      403

        <210> 359
        <211> 411
        <212> DNA
        <213> Homo sapien

        <400> 359
aaataaatac ttagaacacg acttggctcc tacaagcatc tggactctag gtctcagtac     60
tggagtgtct cacccatggg ccccacgcag ggacgccacg gttccctccc accccgtgat    120
caagacacgg aatcggctgc cgatggttgg atcgcaatgc gccccttttc tagagccttc    180
cccggccatc tacaggcagg atgcggctgg gaaaaagaca actggaattt ctcgaaggtt    240
gatggtccgc acggttgagg attctacgtg gttctcttgg ttccctggt gtgtgtgtgt     300
gtggaggagg ccgcggccct tagatcacct tcttgagctc gtcgtacagg accagcacga    360
aggcgccccc catgcccgc aggacgttgg accacgcacc cttgaagaag g              411

        <210> 360
        <211> 378
```

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 360
cctcttcagg ggcccgagcc agggacaggg ccttggtttc cttctccctg gcttctgcct   60
cagctctgtc cctctcatcc gcgtatttgg aagagatgtt tttctcctcg gctaacaact   120
gatcaaattt cctctgcttc ttttccaggt tggacacgag ttgccgctgg ttgtccaaat   180
caacaaccag gtcgtccagc tcctgctgaa gcctgttctt ggtcttttcc agtttatcat   240
aagcggccgc cttctcctcg tactgctggg tgaggntctc gatctccttc tggaacctct   300
tcttcccctc ttccagagct tccacggngc tggcaaagtc ctgcagcttc ttcttcgagt   360
cggagagctg gatgttga   378

<210> 361
<211> 372
<212> DNA
<213> Homo sapien

<400> 361
aaatactggg ggccattaag agtggatgta gctaagagct tagctaacat tgccttttca   60
ctctattttt ctcagatatt gtaagcattc tgttttttcaa tattgtagtt aatttttttgg   120
ctttcaacag cagccctagt aatggtggag ttgttaatta atgtgtatat tgtactgaat   180
ttctgtcagt taaggggttc actgctttgg tggaaattgg tggaaattgc tagcaggttc   240
cacgatgttt atttttttct ccatgttgta tatcattacc atttcacata cgcgtttcta   300
ttttcttcc tctcctcctg atctccttaa aaatgaatct agagttggtg gctttttccc   360
cctcctcttt gg   372

<210> 362
<211> 544
<212> DNA
<213> Homo sapien

<400> 362
cctgagtcac ctagcatagg gttgcagcaa gccctggatt cagagtgtta aacagaggct   60
tgccctcttc aggacaacag ttccaattcc aaggagccta cctgaggtcc ctactctcac   120
tggggtcccc aggatgaaaa cgacaatgtg ccttttatt attatttatt tggtggtcct   180
gtgttattta agagatcaaa tgtataacca cctagctctt ttcacctgac ttagtaataa   240
ctcatactaa ctggtttgga tgcctgggtt gtgacttcta ctgaccgcta gataaacgtg   300
tgcctgtccc ccaggtggtg ggaataattt acaatctgtc caaccagaaa agaatgtgtg   360
tgtttgagca gcattgacac atatctactt tgataagaga cttcctgatt ctctaggtcg   420
gttcgtggtt atcccattgt ggaaattcat cttgaatccc attgtcctat agtcctagca   480
ataagagaaa tttcctcaag tttccatgtg cggttctcct agctgcagca atactttgac   540
attt   544

<210> 363
<211> 328
<212> DNA
<213> Homo sapien

<400> 363
aaactggtta tgacaaaagc ctttagttgt gtttcttgaa ctataaagaa aacaaatttt   60
ggcagtcttt aagtatatat agcttaaaat ataattttta gcatttggca ccatatgtat   120
gccattatat ttgattttgc attactgttt cacaatgaag ctttctttaa ggctttgatt   180
tttatgatta tgaaagaaat aaggcacaac cacagttttt ctttcttaaa tttcatcact   240

```
gttgatgtgg ttcttttgtg ttaaaaaaaa aaagtgcaac tatcaaaact aaaaaattat   300
agagtaatat tgccgttctg ctgatttt                                       328
```

        <210> 364
        <211> 569
        <212> DNA
        <213> Homo sapien

        <400> 364
```
cctgggcacc tctttgcttg aaatatggca agacttggaa aaatgtttgc ccttagaatc   60
tatctcacta ctttagttag ttgtctcctt tgggcctggg cacagttctg gccctgatct   120
ggaacagact cccttttcta aaactgaact tgaccacatc aaaagtttgt aaaacaatct   180
ccatggtaat taaacttgca ttcaacacca tatggtaaca gaagatggca aaggataaga   240
ttcagatctt agatctttcc aagtagggca tgttagatga tagaaggatt agttgcaagc   300
tggatctgag ctcaggcttg ggcatgaagg aaactgtctc ccatgtggtt tggaagagtt   360
aggggctccc tgagctctat tgtgaactat acgggtttca tccaaggaat ggtatgatgt   420
gggcataaaa ccattcttca gacaactgaa gatggcccc ttctgtagcc agaaacacta    480
gctgtcctgc attgtccatt tcctttagcc ccaggcggtc ctgtgtgtac agggaggtct   540
cctgtaaggg aatggtttcc ttggcttgg                                     569
```

        <210> 365
        <211> 151
        <212> DNA
        <213> Homo sapien

        <400> 365
```
aaaaaaaaaa atccttttat tatggaattt gtcaaacaca cacacaagca taacaaaccc   60
ctaggtaccc atctccaagt tttgacccct attataattt catcttcagt gttttattat   120
ccacttcctc tctctctatc tttagtattt t                                  151
```

        <210> 366
        <211> 508
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(508)
        <223> n = A,T,C or G

        <400> 366
```
agtataaaga tatattccat aaaagagttt ggcagtcaaa ganaagcatc gcacttccga   60
aaaacacaag cattcttctc ctagtctaca gagaattgng taaaaaaaaa aaaaaatcat   120
catcaacagc cnccantnta cnccacacta gaatgtacac tccggcaagt aaattaaggn   180
tgcagtccat ccctgaacga tganaagngg tctgagctat ggcaaagngt tanaaagtag   240
cccagctana caaatgcccc agctatcccc aggggagtta ttcagtactt aanacttcat   300
ttccaananc agccccggaa aagccctgac aggaaggggg gaccagngat caccgatntc   360
ccattagggg cggncaccaa aaacaaatg cctggagctt ntgagcagct gcagcctggg    420
gttgtggcta ggcncngggn gnggttgcaa aaaaacggct gtntccgggg agaggcaaat   480
ggcaggccag ccagccctgg gtacatgg                                      508
```

        <210> 367
        <211> 382
        <212> DNA
        <213> Homo sapien

        <400> 367
```
cctgagcggc tagtctttaa gatgcgcttc tatcgtttgc tgcaaatccg agcagaagcc   60
```

```
ctcctggcgg caggcagcca tgtgatcatt ctgggtgacc tgaatacagc ccaccgcccc     120
attgaccact gggatgcagt caacctggaa tgctttgaag aggacccagg gcgcaagtgg     180
atggacagct tgctcagtaa cttggggtgc cagtctgcct ctcatgtagg gcccttcatc     240
gatagctacc gctgcttcca accaaagcag gaggggggcct tcacctgctg gtcagcagtc     300
actggcgccc gccatctcaa ctatggctcc cggcttgact atgtgctggg ggacaggacc     360
ctggtcatag acacctttca gg     382
```

```
    <210> 368
    <211> 174
    <212> DNA
    <213> Homo sapien

    <400> 368
ccttctccct ctttgacaag gatggagatg gcactatcac caccaaggag ttggggacag      60
tgatgagatc cctgggacag aaccccactg aagcagagct gcaggatatg atcaatgagg     120
tggatgcaga tgggaacggg accattgact tcccggagtt cctgaccatg atgg     174
```

```
    <210> 369
    <211> 216
    <212> DNA
    <213> Homo sapien

    <400> 369
aaatctcatg ggttctatta aaaaaatata tatatagggc cccaatccat tgccatcaaa      60
ttgcccttgg acttttccaa ggtatattat ggggttttat gcaaaattcc aagctaccat     120
gtaactttttt ttaaccattt aacaaggagg gggaactgtt tcctaccttc tttacatgtt     180
gtgcattgtt gtggtccaga aatgccaaac ctttttt     216
```

```
    <210> 370
    <211> 344
    <212> DNA
    <213> Homo sapien

    <400> 370
ccttggtcag gatgaagttg gctgacacag cttagcttgg ttttgcttat tcaaaagaga      60
aaataactac acatggaaat gaaactagct gaagcctttt cttgtttttag caactgaaaa     120
ttgtacttgg tcacttttgt gcttgaggag gcccatttc tgcctggcag ggggcaggtc     180
tgtgccctcc cgctgactcc tgctgtgtcc tgaggtgcat ttcctgttgt acacacaagg     240
gccaggctcc attctccctc cctttccacc agtgccacag cctcgtctgg aaaaaggacc     300
aggggtcccg gaggaaccca tttgtgctct gcttggacag cagg     344
```

```
    <210> 371
    <211> 741
    <212> DNA
    <213> Homo sapien

    <220>
    <221> misc_feature
    <222> (1)...(741)
    <223> n = A,T,C or G

    <400> 371
aaattacata tctaattgtg tgatttgtta aatgcccatt tcttcatcta agtgctaagt      60
gctaagtgta gcagtttgtt ccctgctaca ctccaaggca caaaggagtt caaggaatgt     120
gcaatggaaa tcagttagat gaatgtgtta ggaaccttcc ctttaataaa gctggatccc     180
acactagccc ctacaccctc tcatcaccaa atattcctgc ttcctctcac ctgcacttgc     240
tgttctctcc tctgccacac aaatctacct ctcaagccta ggtcccacct gcttcatgac     300
aactttccag actattccag aaccttttaac catctctgac ctctcatcag atctatgttg     360
```

```
tacataacac caattaatga gatcattact gctttatgct ctaattgctt cctgtattca    420
aaatcttctc tccaaccaca taatgactcc ctaaacttct cttgtatttt ccaatgcctt    480
gtacaagcac agaactggtc aatcaataaa tactcactgg ttatttgagg aaaaaatgtt    540
gccaagcacc atctttatca gaaaataaat caattcttct aaacttggag aaatcaccct    600
attcctagta tgtgatctta attagaacaa ttcagattga gaangngaca gcatgctggc    660
agtcctcaga gccctcgctt gctctcggna cctccctgcc tgggctccca ctttggtggc    720
atttgaggag cccttcagcc t                                              741
```

```
<210> 372
<211> 218
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(218)
<223> n = A,T,C or G

<400> 372
ccgccagtgt gctggaattc gcccttggcc gcccgggcag gtaccacaac agcaggnctg    60
agtgagaaat ctaccacctt ctacagtagc cccagatcac cggacacaac actctcacct    120
gccagcacga caagctcagg cgtcagtgaa gaatccacca cctcccacag ccgaccaggc    180
tcaacgcaca caacagcatt ccctggcagt accttggn                           218
```

```
<210> 373
<211> 168
<212> DNA
<213> Homo sapien

<400> 373
actgctaggg aatgctgttg tgtgcattga gcctggtcgg ctgtgggagg tggtggattc    60
ttcactgacg cctgagcttg tcgtgctggc aggtgagagt gttgtgtccg gtgatctggg    120
gctactgtag aaggtggtag atttctcact caggcctgct gttgtggt              168
```

```
<210> 374
<211> 154
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(154)
<223> n = A,T,C or G

<400> 374
tgagaaatct accaccttct acagngagcc ccanatcacc ggacacaaca ctctcacctg    60
ccagcacgac aagctcaggc gtcagtgaag aatccaccac ctcccacagc cgaccaggct    120
caacgcacac aacagcattc cctggcagta cctc                               154
```

```
<210> 375
<211> 275
<212> DNA
<213> Homo sapien

<400> 375
actgccaggg gacagtgctg tgtcagttga acctgggctg ctgtgggaag ttgttgattc    60
ctgactgggg cctgaggtgg tggtgctggc aggtaacagt gttgtatccg ttgagcctgg    120
```

108

```
gctgctgtgg gaagttgtag aatgccgact gaggcctggc gtggtggtgc tgtcagggaa      180
tgctgttgtg tgcgttgagc ctggtcggct gtgggaggtg gtggattctt cactgacgcc      240
tgagcttgtc gtgctggcag gtgagagtgt tgtgg                                 275
```

```
<210> 376
<211> 191
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(191)
<223> n = A,T,C or G

<400> 376
actgccaggg gacagtgctg tgtcagttga acctgagctg ctgtgggaag ttgttgattc       60
ctgactggag cctgaggtgg tggtgctggc aggtaacagt gttgtatccg ttgagcctgg      120
gctgctgtgg gaagttgtag aatgccgact gaggcctgcc gtggtggtgc tgntagggaa      180
tgctgctagc g                                                           191
```

```
<210> 377
<211> 476
<212> DNA
<213> Homo sapien

<400> 377
ccgccagtgt gctggaattc gcccttggcc gcccgggcag gtacatttcc ttgtagactc       60
tgttaatttc ctgcagctcc tggttggttc tggagcagat gatctcaatg agagagtcct      120
cgtcggttcc cagccccttc atggaagctt ttagctcaga agcgtcatac tgagcaggtg      180
tcttcaatag gcccaaaatc accgtctcca ggtggccaga taaggctgac ttcagtgctg      240
atgcaagttc cttttttggtc cttctctggt aggcgaaggc aatatcctgt ctctgtgcat      300
tgctgcggtt ggtcaaaatg ttgacaatgg tgacctcatc cacacctttg gtcttgatgg      360
ctgtttcaat gttcaaagca tcccgctcag catcaaagtt agtataggct ttgacagacc      420
catatgcact tgggggtgta gagtgatcac cctccaagcc gagcttgcac aggatt          476
```

```
<210> 378
<211> 455
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(455)
<223> n = A,T,C or G

<400> 378
agtgtgctgg aattcgccct tggccgcccg ggcaggtaca catcccatct tcaaatttaa       60
aatcatattg tcagttgtcc aaagcagctt gaatttaaag tttgtgctat aaaattgtgc      120
aaatatgtta aggattgaga cccaccaatg cactactgta atatttcgct tcctaaattt      180
cttccaccta cagataatag acaacaagtc tgagaaacta aggctaacca aacttagata      240
taaatcctac caataaaatt tttcagtttt aagttttaca gtttgattta aaaacaaaac      300
agaaacaaat ttcaaaataa atcacatctt ctcttaaaac ttggcaaacc cttccctaac      360
tgtccaagtn tgagcataca ctgccactgg ctttagatac tccaattaaa tgcactactc      420
tttcactggt ctgaatgaag tatggtgaaa caagc                                 455
```

```
<210> 379
<211> 297
<212> DNA
```

109

```
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(297)
<223> n = A,T,C or G

<400> 379
agctcggatc cctagnacgg ccgccagtgt gctggaattc gcccttagcg gcggcccggg      60
caggtacaaa gaatccttag acgccatact gagttttaag ttccttaatt cctaatttaa     120
ggcttctagt gaagcctcct cacagtaggc ttcactaggc ccacagtgcc cctagacctc     180
tgacaatccc accctagaca gactttattg caaaatgcgc ctgaagaggc agatgattcc     240
caagagaact caccaaatca agacaaatgt cctagatctc tagtgtggna gaactat       297


<210> 380
<211> 144
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(144)
<223> n = A,T,C or G

<400> 380
actttgctga aaattctttt tcccagggtc tataaaacat taatttgttt ttatattta       60
ctattttttt gngttttttt gttttaaat caataagtaa tctaggacta gcattatgtt     120
tgctagacct ggcatttgct cggc                                            144


<210> 381
<211> 424
<212> DNA
<213> Homo sapien

<400> 381
actcttgaat acaagtttct gataccactg cactgtctga gaattccaa aactttaatg       60
aactaactga cagcttcatg aaactgtcca ccaagatcaa gcagagaaaa taattaattt     120
catgggacta aatgaactaa tgaggataat attttcataa ttttttattt gaaattttgc     180
tgattcttta aatgtcttgt ttcccagatt tcaggaaact ttttttcttt taagctatcc     240
acagcttaca gcaatttgat aaaatatact tttgtgaaca aaaattgaga catttacatt     300
ttctccctat gtggtcgctc cagacttggg aaactattca tgaatattta tattgtatgg     360
taatatagtt attgcacaag ttcaataaaa atctgctctt tgtataacag aatacatttg     420
aaaa                                                                  424


<210> 382
<211> 408
<212> DNA
<213> Homo sapien

<400> 382
actcttgaat acaagtttct gataccactg cactgtctga gaattccaa aactttaatg       60
aactaactga cagcttcatg aaactgtcca ccaagatcaa gcagagaaaa taattaattt     120
catgggacta aatgaactaa tgaggataat attttcataa ttttttattt gaaattttgc     180
tgattcttta aatgtcttgt ttcccagatt tcaggaaact ttttttcttt taagctatcc     240
acagcttaca gcaatttgat aaaatatact tttgtgaaca aaaattgaga catttacatt     300
ttctccctat gtggtcgctc cagacttggg aaactattca tgaatattta tattgtatgg     360
taatatagtt attgcacaag ttcaataaaa atctgctctt tgtatgac                 408
```

110

```
            <210> 383
            <211> 455
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(455)
            <223> n = A,T,C or G

            <400> 383
actcttgaat  acaagtttct  gataccactg  cactgtctga  gaatttccaa  aactttaatg      60
aactaactgn  cnncttcatg  aaactgtcca  ccaagatcaa  gcagagaaaa  taattaattt     120
catgggacta  aatgaactaa  tgaggataat  attttcataa  ttttttattt  gaaattttgc     180
tganncttta  aatgtcttgt  ttcccagatt  tcaggaaact  ttttttcttt  taagctatcc     240
acagcttata  gcaatttgat  aaaatatact  tttgtgaaca  aaaaattgaga catttacatt     300
ttctccctat  gtggtcgctc  cagacttggn  aaactattca  tgaatattta  tattgtatgg     360
taatatagtt  attgcacaag  ttcaataaaa  atctgctctt  tgtataacag  aatacatttg     420
aaaacattgg  ttatattacc  aagactttga  ctaga                                  455

            <210> 384
            <211> 376
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(376)
            <223> n = A,T,C or G

            <400> 384
actcttgaat  acaaggttct  gatatcactg  cactgtctga  gaatttccaa  aactttaatg      60
aactaactga  cagcttcatg  aaactgtcca  ccaagatcaa  gcagagaaaa  taattaattt     120
catgggacta  aatgaactaa  tgaggataat  attttcataa  ttttttattt  gaaattttgc     180
tgattcttta  aatgtcttgt  ttcccagatt  tcaggaaact  ttttttttctt  ttaagctatc     240
cacagcttac  agcaatttga  taaaatatac  ttttgngaac  aaaaattgag  acatttacat     300
tttctcccta  tgtgggcgct  ccagacttgg  gaaactattc  atgaatattt  atattgnatg     360
ggaatatagc  attgcc                                                         376

            <210> 385
            <211> 422
            <212> DNA
            <213> Homo sapien

            <400> 385
acctgtgggt  ttattaccta  tgggtttata  tcctcaaata  cgacattcta  gtcaaagtct      60
tggtaatata  accaatgttt  tcaaatgtat  tctgtcatac  aaagagcaga  ttttttattga    120
acttgtgcaa  taactatatt  accatacaat  ataaatattc  atgaatagtt  tcccaagtct     180
ggagcgacca  cataggagaa  aaatgtaaat  gtctcaattt  ttgttcacaa  aagtatattt     240
tatcaaattg  ctgtaagctg  tggatagctt  aaaagaaaaa  aagtttcctg  aaatctggga     300
aacaagacat  ttaaagaatc  agcaaaattt  caaataaaaa  attatgaaaa  tattatcctc     360
attagttcat  ttagtcccat  gaaattaatt  attttctctg  cttgatcttg  gtggacagtt     420
tc                                                                         422

            <210> 386
            <211> 313
            <212> DNA
            <213> Homo sapien
```

```
        <400> 386
caagtaggtc tacaagacgc tacttcccct atcatagaag agcttatcac ctttcatgat      60
cacgccctca taatcatttt ccttatctgc ttcctagtcc tgtatgccct tttcctaaca     120
ctcacaacaa aactaactaa tactaacatc tcagacgctc aggaaataga aaccgtctga     180
actatcctgc ccgccatcat cctagtcctc atcgccctcc catccctacg catcctttac     240
ataacagacg aggtcaacga tccctccctt accatcaaat caattggcca ccaatggtac     300
tgaacctacg agt                                                        313


        <210> 387
        <211> 236
        <212> DNA
        <213> Homo sapien


        <400> 387
cgccctcata atcattttcc ttatctgctt cctagtcctg tatgcccttt tcctaacact      60
cacaacaaaa ctaactaata ctaacatctc agacgctcag gaaatagaaa ccgtctgaac     120
tatcctgccc gccatcatcc tagtcctcat cgccctccca tccctacgca tcctttacat     180
aacagacgag gtcaacgatc cctcccttac catcaaatca attggccacc aatggt         236


        <210> 388
        <211> 195
        <212> DNA
        <213> Homo sapien


        <400> 388
acgccctttt cctaacactc acaacaaaac taactaatac taacatctca gacgctcagg      60
aaatagaaac cgtctgaact atcctgcccg ccatcatcct agtcctcatc gccctcccat     120
ccctacgcat cctttacata acagacgagg tcaacgatcc ctcccttacc atcaaatcaa     180
ttggccacca atggt                                                      195


        <210> 389
        <211> 183
        <212> DNA
        <213> Homo sapien


        <220>
        <221> misc_feature
        <222> (1)...(183)
        <223> n = A,T,C or G


        <400> 389
taacactcac aacaaaacta actaatacta nnatctcaga cgctcaggaa atagaaaccn      60
cctgaactat cctgcccgcc atcatcctag tcctcatcgc cctcccatcc ctacncatcc     120
tttacataac agacgaggtc aacgatccct cccttaccat caaatcaatt ggccaccaat     180
ggt                                                                   183


        <210> 390
        <211> 473
        <212> DNA
        <213> Homo sapien


        <400> 390
acaaagcagc aactgcaata ctcaaggtta aaacattaga aaagcatttg tgtgacaggt      60
atattacagt attatcaaaa tattacattt tcagacttac ttagcagata atcatccacc     120
agagcttaaa tctttaaatt atttccatag tcttaaaaaa tatgtaatgt cagaatgcat     180
ataaaaagaa tgtaaaagga aacctaaaat acaaatggaa taatgtaaca aataaatatt     240
tgatttcagt aactgttaat aatcagctca acaccaccat tctctctaaa ctcaatttaa     300
```

112

```
ttcttatagg  aataatgaac  tgtcaaatgc  catggcataa  ttatttattt  ccaagctatc        360
atcaatgatt  agaactaaaa  aaaatttggc  ataaaaaaat  cacaattcag  cataaataaa        420
gctattttta  gcttcaacac  tagctagcat  ctctaagaat  tgttgaaata  agt               473
```

        <210> 391
        <211> 216
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(216)
        <223> n = A,T,C or G

        <400> 391
```
atttgtattt  taggtttcct  tttacattct  ttttatatgc  nntctgacat  tacatatttt        60
ttaagactat  ggaaataatt  taaagattta  agctctggtg  gatgattatc  tgctaagtaa        120
gtctgaaaat  gtaatatttt  gataatactg  taatatacct  gtcacacaaa  tgctttccta        180
atgttttaac  cttgagtatt  gcagttgctg  ctttgt                                    216
```

        <210> 392
        <211> 98
        <212> DNA
        <213> Homo sapien

        <400> 392
```
acttatttca  acaattctta  gagatgctag  ctagtgttga  agctaaaaat  agctttattt        60
atgctgaatt  gtgatttttt  tatgccaaat  ttttttaa                                  98
```

        <210> 393
        <211> 397
        <212> DNA
        <213> Homo sapien

        <400> 393
```
tgccgatata  ctctagatga  agttttacat  tgttgagcta  ttgctgttct  cttgggaact        60
gaactcactt  tcctcctgag  gctttggatt  tgacattgca  tttgacctttt  tatgtagtaa       120
ttgacatgtg  ccagggcaat  gatgaatgag  aatctacccc  cagatccaag  catcctgagc        180
aactcttgat  tatccatatt  gagtcaaatg  gtaggcattt  cctatcacct  gtttccattc        240
aacaagagca  ctacattcat  ttagctaaac  ggattccaaa  gagtagaatt  gcattgaccg        300
cgactaattt  caaaatgctt  tttattatta  ttatttttta  gacagtctca  ctttgtcgcc        360
caggccggag  tgcagtggtg  cgatctcaga  tcagtgt                                   397
```

        <210> 394
        <211> 373
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(373)
        <223> n = A,T,C or G

        <400> 394
```
ttacattgtt  gagctattgc  tgttctcttg  ggaactgaac  tcactttcct  cctgaggctt        60
tggatttgac  attgcatttg  accttttatg  tagtaattga  catgtgccag  ggcaatgatg        120
aatgagaatc  taccccccaga  tccaagcatc  ctgagcaact  cttgattatc  catattgagt        180
caaatggtag  gcatttccta  tcacctgttt  ccattcaaca  agagcactac  attcatttag        240
```

113

```
ctaaacggat tccaaagagt agaattgcat tgaccacgac tantttcaaa atgcttttta      300
ttattattat tttttagaca gtctcacttt gtcgcccagg ccggagtgca gtggtgcgat      360
ctcagatcag tgt                                                         373
```

```
        <210> 395
        <211> 411
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(411)
        <223> n = A,T,C or G

        <400> 395
actgatcatt ctatttcccc ctctattgat ccccacctcc aaatatctca tcaacaaccg      60
actaatcacc acccaacaat gactaatcaa actaacctca aaacaaatga taaccataca      120
caacactaaa ggacgaacct gatctcttat actagtatcc ttaatcattt ttattgccac      180
aactaacctc ctcggactcc tgcctcactc atttacacca accacccaat tatctataaa      240
cctagccatg gccatcccct tatgagcggg cgcagtgatt ataggctttc gctctaagat      300
taaaaatgcc ctagcccact tcttacngca aggcacacct acacccctta tccccatact      360
agttattatc gaaaccatca gcctactcat tcaaccaata gccctggccg t              411
```

```
        <210> 396
        <211> 411
        <212> DNA
        <213> Homo sapien

        <400> 396
actgatcatt ctatttcccc ctctattgat ccccacctcc aaatatctca tcaacaaccg      60
actaattacc acccaacaat gactaatcaa actaacctca aaacaaatga tagccataca      120
caacactaaa ggacgaacct gatctcttat actagtatcc ttaatcattt ttattgccac      180
aactaacctc ctcggactcc tgcctcactc atttacacca accacccaac tatctataaa      240
cctagccatg gccatcccct tatgagcggg cgcagtgatt ataggctttc gctctaagat      300
taaaaatgcc ctagcccact tcttaccaca aggcacacct acacccctta tccccatact      360
agttattatc gaaaccatca gcctactcat tcaaccaata gccctggccg t              411
```

```
        <210> 397
        <211> 351
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(351)
        <223> n = A,T,C or G

        <400> 397
ngccgangta caaaaaaaag cacattccta gaaaaggta ttggcaaata gtaaaaatgg      60
gaggtcaaaa ncaaaaaaaa aaaaaacaaa acnaaaaaaa gaaaaaacca acaattcttc      120
aattcagtgt gcaaacatta tataaaaata gaaatactaa ctctacaggc agtatttcct      180
gataaattat ttaaatagca tatctacnca atctgagata tctattccaa tggcaatgag      240
aaaataattt ataaaaataa agcaatggta taccanatga tagaaaaaaa cataactttc      300
agaaattgta tttaacattt caatgctatt tccttattgn gaatncttct c              351
```

```
        <210> 398
        <211> 363
        <212> DNA
```

114

<210> Homo sapien

<400> 398
acaaaaaaaa gcacattcct agaaaaaggt attggcaaat agtaaaaatg ggaggtcaaa   60
agcaaaaaaa aaaaaaacaa aacaaaaaaa agaaaaaacc aacaattctt caattcagtg   120
tgcaaacatt atataaaaat agaaatacta actctacagg cagtatttcc tgataaatta   180
tttaaatagc atatctacac aatctgagat atctattcca atggcaatga gaaaataatt   240
tataaaaata aagcaatggt ataccagatg atagaaaaaa acataacttt cagaaattgt   300
atttaacatt tcaatgctat ttccttattg ggaatacttc tctgcagagt ttttatgcta   360
tgt   363

<210> 399
<211> 360
<212> DNA
<213> Homo sapien

<400> 399
actgtttcct cgtggttcag gggtgtgcat gaaggctctt aggagagcaa acacctgttc   60
ctattctgta tgtccctccc tcatttcaaa tgagagtaac caattgagta aaataaccaa   120
ataaccattg ccccaccatg aacatggggc ttgggaagac agtcctacaa tcttcatcat   180
atatttaggt ttttaggcca gccagctctt ttttccaaa gctttctttt gaatacccgc   240
ccgggcggcc cctaagggcg aattctgcag atatccatca cactggcggc cgctcgagca   300
tgcatctaga gggcccaatt cgccctatag tgagtcgtat tacaattcac tggccgtcgt   360

<210> 400
<211> 87
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(87)
<223> n = A,T,C or G

<400> 400
ctgcacatat cnattacact ggcggccgct cgagcatgca tgnagagggc ccaattctcc   60
ctatattgag tggaattaca atncnct   87

<210> 401
<211> 328
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 401
acccagggac acaaacactc tgcctaggaa aaccagagac ctttgttcac ttgtttatct   60
gctgaccttc cttccactat tgtcctatga ccctgccaaa tcccccctctg cgagaaacac   120
ccaagaatga tcaataaaaa ataaataaa attaaattaa aaaaaaaaa agagaggaac   180
ccacaaaaaa aaaaaaaaag aaagtntata aaataaaata ttgaagtcct ttcccattaa   240
aaaaaaaaaa aagaaaaagc acggactctt tcatccagtt ctgatgtgat tatctctgga   300
aggcattttc tcctcctctt ccctcccc   328

<210> 402
<211> 268

```
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 402
nacataatga caacatcttc actagactga gtgttcaagg atttgagatg attcgctatt      60
catcacaccc cgaagattga gatccactgt atttacacaa agcaaagcca tgtcagcaag     120
ggactgtcaa cctgattctg agaacataaa cattcaaaat ttattttcca gtgttccttt     180
ttggaaacca acaacacatc tttaatacct acacacacac acatctntac ctttaaaaaa     240
aaaaaaaaag tgnaacttca cagatagt                                        268


<210> 403
<211> 538
<212> DNA
<213> Homo sapien


<400> 403
acagtgatag ctcccccctgg gcaatacaat acaagaacag tgggttttgt caaattggaa      60
caaggaaaca gaaccacaga aataaataca ttggttaaca tcagattagt tcaggttact     120
tttttgtaaa agttaaagta gaggggactt ctgtattatg ctaactcaag tagactggaa     180
tctcctgtgt tcttttttttt tttaaattgg ttttaatttt ttttaattgg atctatcttc     240
ttccttaaca tttcagttgg agtatgtagc atttagcacc actggctcaa tgcgctcacc     300
taggtgagag tgtgaccaaa tcttaaagca ttagtgctat tatcagttac caccatttgg     360
ggcttttatc cttcatgggt tatgatgttc tcctgatgac acatttctct gagttttgta     420
attccagcca aagagagacc attcactatt tgatggctgg ctgcatgcag acatttaaag     480
cttttagaga atacactaca ccagggagta tgactactag tatgactatt aggagggt       538


<210> 404
<211> 310
<212> DNA
<213> Homo sapien


<400> 404
ttttttttata gatacaattg gctttttattt gtgattcatg agtcagggca gtttccattc      60
tgcaaaatat agtgatagct cctactgggc aatacaacag tagaacagtg ggttttgtaa     120
aatgggaatc caggaacaga agaatataaa taaattgatt taaataaact gattggttaa     180
tttcagaata cttcatatta ctttttttcta agagttaaag cagaaaggac tttcttactg     240
tgctgactca dacagcctgg actctcatgt ttttaggaaa attttgtctg ttctgggatc     300
tacctgcttc                                                           310


<210> 405
<211> 559
<212> DNA
<213> Homo sapien


<400> 405
acaaatcaca attattaact cactggtagg gcagtgatga tcaaaccaat tgcattcatc      60
catgctgtaa tgttctctct tggcactaaa ggctgactgc agccggcaaa aaagaatgta     120
agtatgaatt tataaaaaca ttttagatgg ctgacaacgg atcttatttt taaagaatat     180
gtctaattca gaggatcgac aactaatcca tttcaataaa acaatgggga attttttatt     240
gaataaaaat gtaaatatgca taaaaactca agaaggcttt ttaaaaatac ttcctcccca     300
atcattatcc catacttcat gctaatttt aaaagaatct tgaaatcttg aaaacaagat     360
gaagagaatc ttgtttaag tgacaagtta acattattcc tatattaaat gtcaaactgc     420
tattaatgag tagaagtagg aacaaacccg gatcttagga tcctgtccag ggctcattcc     480
```

116

```
ataactccta tatcacaaag acaagatctg gaaccagaaa acagtcatca tccaatgtgc      540
atcagccttg cggcaacag                                                   559
```

```
        <210> 406
        <211> 427
        <212> DNA
        <213> Homo sapien

        <400> 406
acaacagaat atctcgggaa tggactcaga agtatgccat gtgatgctac cttaaagtca       60
gaataacctg cattatagct ggaataaaact ttaaattact gttccttttt tgattttctt     120
atccggctgc tcccctatca gacctcatct tttttaattt tattttttgt ttacctccct      180
ccattcattc acatgctcat ctgagaagac ttaagttctt ccagctttgg acaataactg      240
cttttagaaa ctgtaaagta gttacaagag aacagttgcc caagactcag aattttaaa       300
aaaaaaaatg gagcatgtgt attatgtggc caatgtcttc actctaactt ggttatgaga      360
ctaaaaccat tcctcactgc tctaacatgc tgaagaaatc atctgagggg gagggagatg      420
gatgctc                                                                427
```

```
        <210> 407
        <211> 419
        <212> DNA
        <213> Homo sapien

        <400> 407
acaatttgta gttgtttcca ggtttggcta ataatcattc cttaacctag aattcagatg       60
atcctggaat taaggcaggt cagaggactg taatgataga attaaattag tgtcactaaa      120
aactgtccca aagtgctgct tcctaatagg aattcattaa cctaaaacaa gatgttacta      180
ttatatcgat agactatgaa tgctatttct agaaaaagtc tagtgccaaa tttgtcttat      240
taaataaaaa caatgtagga gcagcttttc ttctagtttg atgtcattta agaattacta      300
acacagtggc agtgttaaat gaagatgctg tctacaaggt agataatata ctgtttgata      360
ctcaaaacat ttttcatttt gtttaaagta gaagttacat aattctatat tttaagtct      419
```

```
        <210> 408
        <211> 523
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(523)
        <223> n = A,T,C or G

        <400> 408
acatttgatg ttatgtgaat gttgagtttt tttcttctaa ttttcacttc agcagtgttt       60
agggctttca gatgccttat tccagtgtga acagaaaaag ttcatatttt atgtggttaa      120
tgctttgatg tgtcacataa agagtagttt gtagaaaatg ttggcacaat tttaacttct      180
tagtggcttg tgacattata tattatatat atatgtatat atatctttat aacattcctg      240
tgtttagtag tgtaaatgtt ctgggcaagt tttaatattt tgaatgcctt tggatattcc      300
agcaataaag gcatcatgtt ctgcaatagg atttcttact catttaccta ttttaacact      360
aaaatagacc acaactgagc acaaattcct tttataaatg ttatagaagc agggaagaat      420
aataaacaca tttgtgaatt gtggttcagt ttatttatct ttagggaagg ctgatcattt      480
atcttatagc acataacccc agcctcttat tcattatggn taa                        523
```

```
        <210> 409
        <211> 191
        <212> DNA
        <213> Homo sapien
```

117

<400> 409
acccccgtagt gatgagcact gactggttca ctggccacat tttagttctt cataataata   60
ggccacaaaa gggctctgtg gtttgcctcc atgtgcactg gcccctcccc accccctaggg   120
ggcactcagt agctgctgag aaggcctgtc cacgangctg ttggaacccc ttcaataaat   180
acttagaagn a   191

<210> 410
<211> 403
<212> DNA
<213> Homo sapien

<400> 410
acactggcca gtgtgttttt ggcgattaaa cataatcctg tgaatcagat taattcactt   60
gctgagtgtt catttgcggc atccctctgt tgggtcttgg gggccctcca cgacctcgtg   120
gggctccccg tggtccactc tgcccagagc ctcgcttgaa attctgctga tatccatccc   180
gttgatagcc agagtaatcc cggggagcac tgaactgaga ctgtgtataa ccactgtttg   240
gagtgttaga gaatgaaggg cggtaaccat catatcctcc tctgaatcca ttggcagggc   300
cccggtatcc attcatcaag cctctagcac cacgggagcc tccacgagac acaccacgac   360
tattgtaata gggctgattg ctacgtggaa atccagtgnt ctg   403

<210> 411
<211> 384
<212> DNA
<213> Homo sapien

<400> 411
acgtgaaatc ataacaacat gttctcttgt gtttggcttc tcttgctcag catgatattt   60
ttacggttca cccatattgc atgtatcagg aatataatcc tttttattat tgagtagtgt   120
tctattgtat gtatatacca cagtttattt ctcccttcat cctttgctag attttggggt   180
tttttcacat tgcgctattc aagtataaac ctgctctcaa cattcatgtg caagtctttg   240
agtggacata tatttgccgt ttctcttgag tgaatgcacc ttgttgggtc acgtggctta   300
atttaaaaaa attttaatca ctgtggtgca tatgtagtga ttattagtga ttatctcata   360
attttatttt cttgatgact aatg   384

<210> 412
<211> 315
<212> DNA
<213> Homo sapien

<400> 412
acaatatttc tcctttgaga agataggata tatgattttc ccaaaaatca caactttgaa   60
ggaagactta nttgctgact tcaattatat cctggaactg gcaacttgtg cccttccttt   120
gcttcaaaaa aagtgtaaga aagagtgata agatcaactt taatcattct tggatcttca   180

118

```
gcaaattcag gatcaatgta gaaaaacact ggcatatcta cttcctcttg gggattaagc    240
ctttgttctt caaaacagaa gcactgtatt ttattgaaat actgtccacc ttcaaatgga    300
acaatattgt atgna                                                     315


        <210> 413
        <211> 554
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(554)
        <223> n = A,T,C or G

        <400> 413
acaggtttca ctattacaaa tatatgatgt taaactaaca aactcatgac cttcaaagat     60
gtcttcgtcc cacgcacaca catttgtaat ttgtgtccat ttgctatttc ccttcttcta    120
taatcttcaa attatatagt tatgcattga gttccctatg catctcaccc atctccttta    180
tctcagcctt ctcatacttt gccattctct tctttctgga aataaccagc acaacaattc    240
cagcaacaac tgctatcacc acaaccacaa taacagcaat aacaccagct tttagaccct    300
gcattgagaa ttcaggtgct ttttcatcaa cataataaat taaagtttga ccaggatcca    360
gatccagttg ttccccattt actgtcaggt gccattttct tagaatgaaa caaggattca    420
cctttaacat cttttttcaaa ataataagcc acatcagcta tgtccacatc attctgagnt    480
ttttgagaag aattttgaac cagatcaata gtgataacat tattctcata caaaatactc    540
gngataaatt ntgg                                                      554


        <210> 414
        <211> 267
        <212> DNA
        <213> Homo sapien

        <400> 414
accagaaagg cacacgattt tacaatattt gttggaatta ccttactttt taacctcctc     60
atagcagttt tggtttgagt atattgatga aagccaaagt ctggtatcta aaacttgggc    120
caatgtttcc caactggtat atgtcaggct ttcccaatag cttaactgtg accctatacg    180
gatggctttt tagatagttc tatactgctg tattgtgtta gcacttttct ttgtcattaa    240
caacacactt taaatgacat ttggtga                                        267


        <210> 415
        <211> 454
        <212> DNA
        <213> Homo sapien

        <400> 415
accggaacct gcagaaacag tgtgagaaat taagtcctgg ttcactgcgc agtagcaaag     60
atggtcaagg ccatggaaaa agcagaaatt taccaagaaa gctgataccc atgtatagtt    120
cccactcatc tcaaatacat ctgctatctt tttaagctaa gtcctagaca tatcggggat    180
aacatggggg ttgattagtg accacagtta tcagaagcag agaaatgtaa ttccatattt    240
tatttgaaac ttattccata ttttaattgg atattgagtg attgggttat caaacaccca    300
caaactttaa ttttgttaaa tttatatggc tttgaaatag aagtataagt tgctaccatt    360
ttttgataac attgaaagat agtattttac catctttaat catcttggaa aatacaagtc    420
ctgtgaacaa ccactctttc acctagcagt atga                                454


        <210> 416
        <211> 370
        <212> DNA
        <213> Homo sapien
```

119

```
        <400> 416
ccgacacggt gccagcgccc tgctgcgtgc ccgccagcta caatcccatg gtgctcattc      60
aaaagaccga taccgggggtg tcgctccaga cctatgatga cttgttagcc aaagactgcc     120
actgcatatg agcagtcctg gtccttccac tgtgcacctg cgcggaggac gcgacctcag     180
ttgtcctgcc ctgtggaatg ggctcaaggt tcctgagaca cccgattcct gcccaaacag     240
ctgtatttat ataagtctgt tatttattat taatttattg gggtgacctt cttggggact     300
cgggggctgg tctgatggaa ctgtgtattt atttaaaact ctggtgataa aaataaagct     360
gtctgaactg                                                            370


        <210> 417
        <211> 463
        <212> DNA
        <213> Homo sapien


        <400> 417
acactttata tattccaaat tgatcagata tatggtttgc aaattcatct caatctgtag      60
cttatctttt cctcttctta aatcacaagt ttttaaattt tgaagaagtc caatatatca     120
gattttgtct tttatggatg tgctttcggg gcaaagtcca agaacttgtc acctagccca     180
agatcctgaa gattttctc ctgtggcttt tttcaaagtt atctagtttt atgtatcaca     240
tttaagtccg ttatacattt tgagttaaat tttatataag atgtgaggtt taagtagagg     300
ttctttttttc tcctcgccat gggtgtctaa ttgctctagc ataatttgtc agaaaggcta     360
ttcttcctcc attgaattgc ttttttcactt tttcaaaatc agctgagcat atttatatgg     420
gtttatttct gggttctctc atctgttcca ttgacgtatg tgt                       463


        <210> 418
        <211> 334
        <212> DNA
        <213> Homo sapien


        <400> 418
ttagcatttg cttttatttt tttactttga tgccttttca aattggcatg tctttaaagt      60
attttttcttc ctgattaaaa atgtgtgtgt atgtgtgtgt gtgtgtgtat atatatattt     120
ttttaaatca cattaatttt accaagtgaa accaagccat actgtttttg agccaattaa     180
gaaaattgcc attttttaaag tgtagcattt cagggtaaag acccatgaaa tggcttgatg     240
tattctagac tactgaaaga aaaccacttc aaagattttg ttgaaagttt tagtgttgtc     300
tgaaatgcaa gagggaaggt gattggtagt gagt                                 334


        <210> 419
        <211> 297
        <212> DNA
        <213> Homo sapien


        <400> 419
acttctttga ccaaggaata ccacagacac cctaccgata gaacagtggc tcagatctta      60
cttgctcctg cttacgaagt attcccaatc actggtcatc tgaccctact tgaacactcc     120
tgaacagtca tgttttttaa aatcttcctt tatatcaagt cagagagtat acttctataa     180
atttcactca tggatgttag gaaatctagt catcttccct gtgattgccc tgttaagtat     240
ttaaccatag ctatcatgtg tttcccaaat cttctctaga ttaaatatct tcagtta        297


        <210> 420
        <211> 418
        <212> DNA
        <213> Homo sapien


        <400> 420
acgagaggaa ccgcaggttc agacatttgg tgtatgtcct atcaatagga gctgtatttg      60
ccatcatagg aggcttcatt cactgatttc ccctattctc aggctacacc ctagaccaaa     120
cctacgccaa aatccatttc gctatcatat tcatcggcgt aaatctaact ttcttcccac     180
```

120

```
aacactttct cggcctatcc ggaatgcccc gacgttactc ggactacccc gatacataca      240
ccacatgaaa tatcctatca tctgtaggct cattcatttc tctaacagca gtaatattaa      300
taattttcat gattttgagaa gccttcgctt cgaagcgaaa agtcctaata gtagaagaac     360
cctccataaa cctggagtga ctatatggat gcccccacc ctaccacaca ttcgaaga         418
```

        <210> 421
        <211> 304
        <212> DNA
        <213> Homo sapien

        <400> 421
```
acgcctggac ccctgtgact tgcagcctat ctttgatgac atgctccact ttctaaatcc      60
tgaggagctg cgggtgattg aagagattcc ccaggctgag gacaaactag accggctatt      120
cgaaattatt ggagtcaaga gccaggaagc cagccagacc ctcctggact ctgtttatag      180
ccatcttcct gacctgctgt agaacatagg gatactgcat tctggaaatt actcaattta      240
gtggcagggt ggttttttaa ttttcttctg tttctgattt ttgttgtttg gggtgtgtgt      300
gtgt                                                                   304
```

        <210> 422
        <211> 578
        <212> DNA
        <213> Homo sapien

        <400> 422
```
actgtgcagg cagattcaca gggtggtggt aaagcatcca caatggctct ggcagcatca      60
ggatcacact tgaaggggct ctcagacaaa gttgtattca tgcaactgat tccttttcca      120
ttcgttttct tagtcactaa tgctttccaa tggtcatgag tgctttaat aatatcaatg       180
gcaaagtcct tatctttaaa ttctgcatta aacgcaaact cattttctgg ttttccatca      240
ggaaccttat accttctaaa ccagtccaca gtagcttcta agtagccagg tttcagccgt       300
ttgacatcat tgatatcatt ataattggct gcatcaggat catccacatt aatggcaatg       360
actttccagt cggtttcccc ttcgtcaatc atagccaata tgcctagaac tttcaattat       420
ttatttcacc tcttgcacat accttgcttc caatttcaca cacatcaatt gggtcattgt       480
caccacaaca gccagtatgt ttatcattgt gccctgggtc ttcccaagtc tgagggatgg       540
caccatagtt ccagatatat cctttatacg gaacaaa                               578
```

        <210> 423
        <211> 327
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(327)
        <223> n = A,T,C or G

        <400> 423
```
acagtatatt tttagaaact catttttcta ctaaaacaaa cacagtttac tttagagaga      60
ctgcaataga atcaaaattt gaaactgaaa tctttgttta aaagggttaa gttgaggcaa      120
gaggaaagcc ctttctctct cttataaaaa ggcacaacct cattggggag ctaagctagg      180
tcattgtcat ggtgaagaag agaagcatcg tttttatatt taggaaattt taaaagatga      240
tggaaagcac atttagcttg gtctgaggca ggttctgttg gggcagtgtt aatggaaagg      300
gctcactgnt gntactacta gaaaaat                                          327
```

        <210> 424
        <211> 384
        <212> DNA
        <213> Homo sapien

121

```
        <400> 424
acgaaaaata aatctcctta aaaactaaat aaaatgcact gtattcttac agttaatgtt         60
tataactata gtaaaaaatt aatatatatc ctattacata aatgttattt cttaggtgtt        120
ccattaagaa gagcaataga ataatgctaa aaaataatgc ctataaatct tcagagtata        180
aagacatcca ttcagaaaca aaaattagca ctaaattttt tataaaatag accagatgac        240
aaaatttatt ttattttaa acagtggttt tgacacaaat tatgttattg aaaagcatta        300
ttaatgttta atttatttaa aattttggaa tttgccattt ctcagagaat gatcaggcct        360
taggaaatta atacagtagt agta                                              384
```

```
        <210> 425
        <211> 255
        <212> DNA
        <213> Homo sapien
```

```
        <400> 425
actatcaggc tttgtgctga tttcctgaac aaactgcatt atattatgaa aacaaaagga         60
aaagaagaaa taataaaaac tatactccca tatttcactt acagtgtttg agttcctgga        120
aggacctata taatggaggc agcattcaaa caagaaatta tgccaatcaa ctgtcaaatt        180
ttcactataa ttttcctaaa aaggcgtttt tcccccaata tctattaatc tcaaagaaac        240
ataagttgtg aatgt                                                        255
```

```
        <210> 426
        <211> 196
        <212> DNA
        <213> Homo sapien
```

```
        <220>
        <221> misc_feature
        <222> (1)...(196)
        <223> n = A,T,C or G
```

```
        <400> 426
acatgaantn nccaggccca cacagccaga cagcaacaga accaagacct agggctcttc         60
actcctgtta catcacacca tggcaatgat tttacattct ccaactgatt caaatcatat        120
ggcagctagg gatttggggg ctccatgttt tatttcaatt gcaagttcaa gatttctttt        180
tatctttgtg ggctga                                                       196
```

```
        <210> 427
        <211> 163
        <212> DNA
        <213> Homo sapien
```

```
        <400> 427
acagaagatc catggaggca agtgctgtca ggaaggacac tgcctccctc caccctccca         60
aatgtcacca ccaagttcct tcaggtgaga cctcacacaa tgtcaagtgc tttctaggaa        120
atactaagat caggttgaga gattctgctt ggtctagtca atc                         163
```

```
        <210> 428
        <211> 315
        <212> DNA
        <213> Homo sapien
```

```
        <220>
        <221> misc_feature
        <222> (1)...(315)
        <223> n = A,T,C or G
```

```
        <400> 428
```

```
nactgagtan agatgctggg gaatgtgcaa tatgccttga agaattgcag cagggagata    60
ctatagcacg actgccttgt ctatgcatat atcataaagg ctgcatagat gaatggtttg   120
aagtaaatag atcttgccct gagcaccctt cagattaagc gtcagcttcc tgttttatag   180
gttttcttgt cttgacaaga tgcttgaaaa accaagagga tatgaaaatc tgtctctgga   240
gaaacaaaga cgcaggcata ctcagccaga aatctgagtt ttgtgagact tggtaataca   300
gagatggaca atcgt                                                    315
```

```
        <210> 429
        <211> 131
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(131)
        <223> n = A,T,C or G

        <400> 429
acagttaggn actagaacat ttgttaagcc tcccaaagta gngtgcatgg aagattctag    60
agtgtccagc tcttgcacta caaatgtaat aataacagaa taaatacact taccctgatg   120
atattgaggg t                                                        131
```

```
        <210> 430
        <211> 503
        <212> DNA
        <213> Homo sapien

        <400> 430
actgattttt aataaaagaa ataaggttca aagtttagca caacaacaca gcaataagaa    60
gctgacaact tggataaaaa tacaagaaag taacacagag cccaggctac ccattattta   120
ctgtgtgcat acaggaatgc tatacttcag atgtataaat tagagactga ttttaagtta   180
ttaatttaac tactttttgt ccactgtgct aaactaaatt ttatactaat gtgctactgc   240
gtaaacactt caaagcaatc ttcattaaaa tgctgcaaag aaaaacaaga atacacatca   300
tccaaaacta aggatgtcat tgcagttcac agtttgtata ataaataccc tccctttcaa   360
tcactactaa gatcactaca tcctatctac tcatcagcac aaccttgaag caacttatac   420
ttacaaatat tagcaatgca gccaaacatt tgttttttgc aaagcaacta gtaaaaatca   480
agaattttaa ttaagacggt gca                                           503
```

```
        <210> 431
        <211> 207
        <212> DNA
        <213> Homo sapien

        <400> 431
acaagtgtgg cctcatcaag ccctgcccag ccaactactt tgcgtttaaa atctgcagtg    60
gggccgccaa cgtcgtgggc cctactatgt gctttgaaga ccgcatgatc atgagtcctg   120
tgaaaaacaa tgtgggcaga ggcctaaaca tcgccctggt gaatggaacc acgggagctg   180
tgctgggaca gaaggcattt gacatgt                                       207
```

```
        <210> 432
        <211> 485
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(485)
        <223> n = A,T,C or G
```

123

```
    <400> 432
aaaaaaagta atggaaaaat ggttgcaggt ttaatcncaa aangaactta attttngtng     60
attttgtttt atctgctaaa acactaatat ctataaatat gaactgacag catcgttcta    120
aatttacttc tgaagagctg tcgagacttc aataaaatat aagcaagtta ctggatcata    180
tttatggact gctgaattaa ctacccgaaa agtatcagtt actttcaaag aacacaaaac    240
aaagtgaacg tggaaaaaag ccttctttgc aaaagtcctt ttattagtcc tatcctctaa    300
aattccaagc cacagagcct tgatattcct ggattctgtt ttaagtaacc ttagttttaa    360
atatgacact tgggatatgc acaatgggaa agggtaggat atgtgaacaa aatttaattt    420
cttttttcca aaggnagnca ttttctttaa atncatccta tccacttttg cccacttccc    480
catgt                                                                485

    <210> 433
    <211> 280
    <212> DNA
    <213> Homo sapien

    <400> 433
actgtcacta caatattaca ttctgcaaat gttattctgt tgtatcagat acaaaatttt     60
agtgaggtat ctctaaggca catagtagaa aacaaaattg gttaattact caagttcctt    120
tcactgtgat ttggaaatga tttaatcttt atagaatgag aacctttttt ggactagctt    180
ttttattaaa atggctcaat ttgtgttgat aaggattgca ttaatattta atagtgcttg    240
cttttcctct gggcacacca ttttgatcat taaccagagt                          280

    <210> 434
    <211> 234
    <212> DNA
    <213> Homo sapien

    <400> 434
ctttgctgcg catcaggtgc tttaagcttc ggaacaactg tgcaggattc tattttagta     60
ttctggaagc atcattgagg aagtagtcca gtgaagttag ctctaaaaaa actctttact    120
ctaacaatta aaagaaatat gccaaaggat ccataaggga tgaataaatt attaaactat    180
taagaagttg ctataaatat gcagtgttaa ttcaataatt cataacggac tggt          234

    <210> 435
    <211> 330
    <212> DNA
    <213> Homo sapien

    <400> 435
acctcccgtg tcaccagttc ccacagaagc actgcaaaac tccacatgtc tgctgagcgt     60
ctgtttgtgt cttcaggctt cttctgcaga gcttcggggg ctacccaggc aggtgcatac    120
atgcgaccag gacattggaa agagaacttg acatcagcca tgctaattcg ggcagtcatg    180
tcctcatcaa tcattacact acggctattg agtgcatgtc gtgggatgag gggctctagt    240
gtgtgtagga aagccatgcc ccttgccatg tccaaagcaa acttcacagc ctggctctgg    300
tccacgacga aattggtgcc ttcatgtagt                                     330

    <210> 436
    <211> 311
    <212> DNA
    <213> Homo sapien

    <400> 436
acaactttac aatggaattg tatttcaatg attattttga tatcagatta aaccttccaa     60
aaagttacac ataattcagg tctattttttt ctaccagtaa gagttctgct aaattacaaa    120
accccataat cacagtgttc agtttttaaa aaattaaaca cacagtaatc ctgtcaatgt    180
taatcaaaat caaaacttcg gaatgccgtg gcattatgt gaccaatctg agttttagat    240
```

124

```
acaaatacca gctgtttatc ccatgaacca tttttcctag gctgaggctg tgaaaaatcg     300
aaagtcggcg t                                                          311

          <210> 437
          <211> 355
          <212> DNA
          <213> Homo sapien

          <400> 437
actagtggat gggggtcagg gtgtcactcc aaggccctct acagacccag agaagaggaa     60
agtcaaaaaa gccagatatg agactgctga agtggtgtta agaaatatag gcaaggtaaa     120
gggaacaaga tctgggctcc ctcctacttg tgtccctcac tggacctcag acaccctacc     180
tctaagactg gttcttagaa ggctgaacag taaggagcat tccaatagct tctgaaactc     240
ccaaggctgt ttcaagtagt cgaaagccat ccctggactg ttcaggtgcc ttttctattt     300
cccacctgag ctctctgccc tttctttgag cctcacaggt ttccagaatt acagt          355

          <210> 438
          <211> 431
          <212> DNA
          <213> Homo sapien

          <400> 438
acagtaactt taactttaca tagagctgag ataaaaataa agctttctta caaattacat     60
ttttttttcca gtgaattact tttgcagtaa aaatagctgc tacataaatc cctcctgatc     120
tctgaaaagg agttgcatat ttccaaaaat aatattctta ttttaatcac acagaagaac     180
gtggagcaca ggaaggaaat ggctgggtgg tcagagagag gtgagctgtc ggagaaacac     240
agttaaacta aaaaataaaa tccattttgt gtataaactg acttaaacgc atgcaaagaa     300
gtggaaaaca tatgccattt gtcaagaaaa atactgcttt atagctttta ctttacaatt     360
aaaggagaaa gcagaggcca gatataagcc cagataataa catttaagtt tctcataaaa     420
ctcccaaatg t                                                          431

          <210> 439
          <211> 170
          <212> DNA
          <213> Homo sapien

          <400> 439
actgtcataa aaaacagtgg agctctgtat tagaaagccc ctcagaactg ggaaggccag     60
gtaactctag ttacacagaa actgtgacta aagtctatga aactgattac aacagactgt     120
aagaatcaaa gtcaactgac atctatgcta catattatta tatagtttgt                 170

          <210> 440
          <211> 400
          <212> DNA
          <213> Homo sapien

          <400> 440
acgtaaaaag aacatccttc ccatcttcaa ggtcaagatt gaacgctgac tcctgcagga     60
agtcttccag gattcccagg caggaatgat ggctccctgt ccctgtagct ccaggagttc     120
ttgcttcacg cacgcctcac ataccagact gaatgttggc aggaggagtg accaggtcgg     180
tcatctgtgt ccctaccacc tacaacaggc cagcaatcta cccgtgtgtg tttgttggac     240
agaattaacc atgatgggcg gccgagggcg cctggagcta tttgggggct tggagagaac     300
ctcttaggag agtgtcaggc tctaggccag tgtcaccaga ggaggtcagt ctcagtcctt     360
ggagtggtgg gatggaaacc agacgggact ggcatggtcc                           400

          <210> 441
          <211> 204
          <212> DNA
```

125

```
        <213> Homo sapien

        <400> 441
acctagttac ttcttaagat caggtgtata aaactgtgga gtggagcggt atggtatgga    60
atgacttgga atgtaagctg tcagggagaa aatgttgtta cacttttgct aagatctggg   120
ggtttcttca tattcctgct gttggaagca gttgaccaga aatgcttgcc agtactgcca   180
aagcactgct gtgaaatgtg aagt                                          204

        <210> 442
        <211> 649
        <212> DNA
        <213> Homo sapien

        <400> 442
acatttaatt ttttacaaca ttttctccct agagatataa tttagatatt cctatcttca    60
aagtaaaaat caaaatagga aataagcata gaaacagcct attggcagtg gttacacctg   120
catggtattt atgagtctcc aaactattgg aaatttattt caaccaaggt tctcttaagt   180
cttcattact tgggtgtaac tcgagagaaa actaatttat atcaatttac agtttagtgg   240
tcatgatcag gggaaagtga tactcttcca ctgactacaa gtcattgcag aggcagttta   300
gaacttttcc tttattccta atatacagga caaaccttgc cgacatctca ctacctcaaa   360
aatcaaattt aaatgaagta tccaggagta gcctaaagaa tgagtgtaat ctggatggat   420
tttagtctaa atttatgcct tgctcttcag taaagtatag taactccaga tatatgttcc   480
acagatgcaa taatttctgt tccttgttcg gtgcagaata taatttatac ttcctgaaat   540
caactttgtc tattcatgaa aatagctgct ttttatttgc ctttgtctca ctttgaatat   600
atatgatcca caggttacag acttttccaa taactacatt tcaacttgt                649

        <210> 443
        <211> 346
        <212> DNA
        <213> Homo sapien

        <400> 443
acgtgggatt gaaatgcaca tacatgtttt tgctaagagc acatacattt cattctcctc    60
actttgttca taacctcagc attgtcagat aacctcagtg agttaactca aagcctttta   120
ttatggaaag aactggcaca gttacatttg ccagtggcaa catccttaaa aattaataac   180
tgatgggtca cggacagatt tttgacctag ttcctttttc ttttagagca aaaagaactt   240
ttacctcggc atccagccca acccctaaag actgacaata tccttcaagc tcctttgaaa   300
gcaccctaaa cagccatttc cattttaata gttggatgcg gattgt                  346

        <210> 444
        <211> 425
        <212> DNA
        <213> Homo sapien

        <400> 444
accaatttcc ttttacagta aaggggcttt tcctgttgct tgttgaaccg gttcccagct    60
gcccattacc accaagccca aaagagtaaa ttcgtcctga tgaaggaaca aaagcagaag   120
tgtgctgccg tccacaagca atctcagtga caatgcttcc cataagttca aaaactttcc   180
ttgggtttat ttcatgactg gtagaattat ggcccaactg accataccct ccagctccaa   240
aagtaaacac tccaccttcc ttggttagag cagcagtatg atcttctcca caacaaatat   300
aaactatttt ctgagatctt agtgacttta gtaaattagg aacataccta tcattttcat   360
cattaagacc tagctgacca aacttgttgc gtccccatcc aaagatagct ccagaaaggg   420
tgagt                                                                425

        <210> 445
        <211> 210
        <212> DNA
        <213> Homo sapien
```

126

```
<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 445
nactgtccca atataaaaca gtaattattt gacctttgca ctgtttgtct ggtccttttc      60
agtttgattg catataaatg tggaacttga tagatctcta tattttaat gcacttgtga      120
taaactggca gcagggttag acattacttt caaagcttga ggtagaccga gtcagcatgc      180
tagacaggct tctctctcta accaaaactg                                       210


<210> 446
<211> 326
<212> DNA
<213> Homo sapien

<400> 446
tcgaaagacc cctgtaaaag agcccaacag tgaaaatgta gatatcagca gtggaggagg      60
cgtgacaggc tggaagagca aatgctgctg agcattctcc tgttccatca gttgccatcc      120
actaccccgt tttctcttct tgctgcaaaa taaaccactc tgcccatttt taactctaaa      180
cagatatttt tgtttctcat cttaactatc caagccacct attttatttg ttctttcatc      240
tgtgactgct tgctgacttt atcataattt tcttcaaaca aaaaaatgta tagaaaaatc      300
atgtctgtga gttcattttt aaatgt                                           326


<210> 447
<211> 304
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(304)
<223> n = A,T,C or G

<400> 447
ncntcnaggt acatgctaga agtctgatgt ngtnngtaac acagaaacat acacagtctt      60
catattcaaa gtcttcacng ggatgtcgtt ctgtaatttc ctgcgtttgg gtctcttcca      120
gaaacagctt tagcttcctg ctccgaaggc caaacacctt ggctgcttca tacagaagac      180
cttggtgggt gagtccattc tgcccaagtg ggttttcaag caggagagtg cccactgtcc      240
ccattaaaca ctcttgtggc tttgcattca ggagctgtag gttgatatac tgacaaggaa      300
gagt                                                                   304


<210> 448
<211> 203
<212> DNA
<213> Homo sapien

<400> 448
acatgaaagc ggcaatgcgg taaaaagcga attcttaccc aaggtcagaa ttttttatta      60
agcgcatttt cattagttgg acaaacaacc ttataaaccc ttatgtcaaa ccatataatg      120
tgaagaatct ccatgggaga gatttttttt cacccttcag aattatcttt ttcccctaag      180
accttcatat gaatcttcct tgt                                              203


<210> 449
<211> 481
<212> DNA
<213> Homo sapien
```

127

```
<220>
<221> misc_feature
<222> (1)...(481)
<223> n = A,T,C or G

<400> 449
acttgttcta taatactctg atgtttcctt aaattcctga acaacattct gtttactaaa        60
tttctttttct tcctttattc acaccaaatt ccaccctata atagaagcta attatttcag      120
aaagcttttt agtgatcatt tattactttg tgtttactag atattaattc taagatgaat       180
tcctttagaa ttttagaaaa aattattcta gacaacaatc aaagtaaagg atacatccag       240
cattgaaacc ataagccggc aagtctccag gttaaaaggt ttgtatcctc cagcaatgcc       300
agactgtgtc agacatctct gcaattcatc agcatctatc tgcccatcct gtccagctac       360
agcagcaaag ,taaccataca gcggatcctg agtttgtccg ggaaacgcag gccctccggg      420
agcccctcca tactgcatct tgagttgaag tcttatangt agaagctggt gatccttaga       480
g                                                                       481

<210> 450
<211> 296
<212> DNA
<213> Homo sapien

<400> 450
acatggttta atacaacaac aaaaaaattt aatcaagtga aacgtaataa actgaacaat        60
aaacactcaa aacattttcc attggaaaca tgtaaagaca atatgaggtt ttgttaccat       120
cttactgcaa ttttcttatg tgttactagt ctacataccc catgttttct gtaatcatgc       180
agatgtgaat ggaagtttga atgattaaat aaatgaaaag tccgtttact gcagggaatc       240
atttcacaag gcagccaaac cgggtttaga gaacaaaact attcaagaaa ttctcc          296

<210> 451
<211> 294
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(294)
<223> n = A,T,C or G

<400> 451
acatgntcca aggcacgcgn ctgtgaactt cctctgagtg aaggcatccc ctccagcacc        60
tttcagcctg ctagttagga cgacccgccg ccaccctcca ggacctccag ccctgcactg       120
cctttcctct cttttaaata attcttcatt gagttctaat atgtaaaaaa aaagtttact       180
gtaaagtttg caaataanga aatttttttt aaaagtcctc agtaatctta ccagtaacaa       240
ttgttatggg cacatttgct tttggaagat ttcttttgta tgcatgggat aagt            294

<210> 452
<211> 129
<212> DNA
<213> Homo sapien

<400> 452
actttttagat cacaaatttg cctttaagta acacataata cacttaaggc agatttgcct       60
tacaggtggc ctcagcttct aaacaccact acactgcttt atataaaaaa caaaaatcac       120
atagaagag                                                               129

<210> 453
<211> 151
```

128

```
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(151)
<223> n = A,T,C or G

<400> 453
actctcaann tgtatttagg tgccaacaca tttaggatca ttgngnnttc tcagtgaatt      60
gaccttttta tgagaataaa atgtctattt ctgaaatgtc cctatttctg gaaatgttcc     120
ttatactaaa gtccaacttg tgtggattan t                                    151

<210> 454
<211> 119
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(119)
<223> n = A,T,C or G

<400> 454
tgctgatgna gcatgctttt taaatccttt aaaaacactc accatataaa cttgcatttg      60
agcttgtgtg ttcttttgtt aatgtgtaga gttctccttt ctcgaaattg ccagtgtgt      119

<210> 455
<211> 515
<212> DNA
<213> Homo sapien

<400> 455
accttataaa gttccttttc atccttctct gtcttcaact gacattcaag ttgttctctt      60
tcatgttgtg ccttcttgag tttggccttt aaactgtcta attcggtttc tttttcaatt     120
gctttatgtg ttactgacac aatatcttcc tcaagctgat gggctttgga tgtagcatca     180
ctgaacctct tcttaaactc ttcattttcc attttaagc tttgtgttac ttcagtaaga      240
ccctttgtt ctgcttgcag ttggtcacat ctttctttct catggttaag ttctctttcc      300
attctcccaa cttgttctcg aagttgtgct gtttcttttt ccagaacggc aattaacttt     360
aacagttctt cttttctttt catggttttc tcaattttca actcaagaag gcctgctttt      420
gtggtcacca ctaacatgtc agaatttcct tcatcttcca tagtaagcag ctcttcaact      480
ggagaagaag ctcgaaactg gaaaggtgta cctgc                                515

<210> 456
<211> 350
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(350)
<223> n = A,T,C or G

<400> 456
actcccctcc ccaaatagaa acctcaaaga ctgatccatt tcccctaggg cctgggccag      60
gagtagctca ctgctcactg ctgaggagaa aggcacaaga tataatgtca taagagcagg     120
acagtggctc agcctacaga gttccctata ggggaaagaa ggcaggaaat aggcgcaggg     180
tctggtcctg tccctgcacc accctgagca gctagtcttg ggaagggatt acaggccctg     240
```

```
ggccataggc tgctcgccat tctgctttcc tatcctgttt ctctccctgt gctgctccct      300
tttagccagn gctgagaaat gttcancacc tgaggcaaaa ctgccatagt                  350
```

        <210> 457
        <211> 293
        <212> DNA
        <213> Homo sapien

        <400> 457
```
gcagggccaa cagtcacagc agccctgacc agagcattcc tggagctcaa gctcctctac       60
aaagaggtgg acagagaaga cagcagagac catgggaccc ccctcagccc ctccctgcag      120
attgcatgtc ccctggaagg aggtcctgct cacagcctca cttctaacct tctggaaccc      180
acccaccact gccaagctca ctattgaatc cacgccattc aatgtcgcag aggggaagga      240
ggttcttcta ctcgcccaca acctgcccca gaatcgtatt ggttacagct ggt            293
```

        <210> 458
        <211> 500
        <212> DNA
        <213> Homo sapien

        <400> 458
```
actagactcc agattaccct ttcttaataa atatctcagg gtaaggaaag aaagaaactg       60
tatagatata tttaaaatag agaatacttt ccaagcaata catgatgcct ttcctaaaag      120
actctaaaag aaaaagattc tgtaactctc ttttagcacc aaattattgt ttatcttgct      180
ggatatttta tatgaacagt gttaatttag atgcactaaa gcaaggtag gcaaactaca       240
accatgagtc aaacatggcc acacccattc atttgctatt gtctaagctg gttttgcact      300
acaactgcag agttgaatag atgcagcaga tcctttacag aaaaagtttt ctgacctcaa      360
ttctaaagta attgtagtag ggagctggag gactttcttt ccctttatgg taattttttg      420
agctacaaaa agagccttgc agaaatgggt gaagggatta atcttttaaa aataaatgct      480
atatattagg aaaataaaaa                                                   500
```

        <210> 459
        <211> 394
        <212> DNA
        <213> Homo sapien

        <400> 459
```
ggtgaaaaga cttgattttt tgaaaggatt gtttatcaaa cacaattcta atctcttctc       60
ttatgtattt ttgtgcacta ggcgcagttg tgtagcagtt gagtaatgct ggttagctgt      120
taaggtggcg tgttgcagtg cagagtgctt ggctgtttcc tgttttctcc cgattgctcc      180
tgtgtaaaga tgccttgtcg tgcagaaaca aatggctgtc cagtttatta aaatgcctga      240
caactgcact tccagtcacc cgggccttgc atataaataa cggagcatac agtgagcaca      300
tctagctgat gataaataca cctttttttc cctcttcccc ctaaaaatgg taaatctgat      360
catatctaca tgtatgaact taacatggaa aatg                                  394
```

        <210> 460
        <211> 279
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(279)
        <223> n = A,T,C or G

        <400> 460
```
actnccgatt gaagccccca ttcgtataat aattacatca caagacgtct tgcactcatg       60
agctgtcccc acattaggct taaaaacaga tgcaattccc ggacgtctaa accaaaccac      120
```

```
tttcaccgct acacgaccgg gggtatacta cggtcaatgc tctgaaatct gtggagcaaa      180
ccacagtttc atgcccatcg tcctagaatt aattccccta aaaatctttg aaataggggcc     240
cgtatttacc ctatagcacc ccctctagag caaaaaaaa                             279
```

        <210> 461
        <211> 278
        <212> DNA
        <213> Homo sapien

        <400> 461
```
tttggacact aggaaaaaac cttgtagaga gagtaaaaaa tttaacaccc atagtaggcc      60
taaaagcagc caccaattaa gaaagcgttc aagctcaaca cccactacct aaaaaatccc      120
aaacatataa ctgaactcct cacacccaat tggaccaatc tatcaccctaa tagaagaact     180
aatgttagta taaagtaaca tgaaaacatt ctcctccgca taagcctgcg tcagattaaa      240
acactggact gacaattaac agccaatatc tacaatca                              278
```

<210> 462
<211> 556
<212> DNA
<213> Homo sapiens

<400> 462
```
aacgtccaag gggggccacat cgatgatggg caggcgggag gtcttggtgg ttttgtattc     60
aatcactgtc ttgccccagg ctccggtgtg actcgtgcag ccatcgacag tgacgctgta     120
ggtgaagcgg ctgttgccct cggcgcggat ctcgatctcg ttggagccct ggaggagcag     180
ggccttcttg aggttgccag tctgctggtc catgtaggcc acgctgttct tgcagtggta     240
ggtgatgttc tgggaggcct cggtggacat caggcgcagg aaggtcagct ggatggccac     300
atcggcaggg tcggagccct ggccgccata ctcgaactgg aatccatcgg tcatgctctc     360
gccgaacccg acatgcctct tgtccttggg gttcttgctg atgtaccagt tcttctgggc     420
cacactgggc tgagtggggt acacgcaggt ctcaccagtc tccatgttgc agaagacttt     480
gatggcatcc aggttgcagc cttggttggg gtcaatccag tactctccac tcttccagtc     540
agagtggcac atcttg                                                     556
```

<210> 463
<211> 659
<212> DNA
<213> Homo sapiens

<400> 463
```
cacactgtgc ccttccagtt gctggcccgg tacaaaggcc tgaacctcac cgaggatacc     60
tacaagcccc ggatttacac ctcgcccacc tggagtgcct ttgtgacaga cagttcctgg     120
agtgcacgga agtcacaact ggtctatcag tccagacggg ggcctttggt caaatattct     180
tctgattact tccaagcccc ctctgactac agatactacc cctaccagtc cttccagact     240
ccacaacacc ccagcttcct cttccaggac aagagggtgt cctggtccct ggtctacctc     300
cccaccatcc agagctgctg gaactacggc ttctcctgct cctcggacga gctccctgtc     360
ctgggcctca ccaagtctgg cggctcagat cgcaccattg cctacgaaaa caaagccctg     420
atgctctgcg aagggctctt cgtggcagac gtcaccgatt tcgagggctg gaaggctgcg     480
attcccagtg ccctggacac caacagctcg aagagcacct cctccttccc ctgcccggca     540
gggcacttca acggcttccg cacggtcatc cgccccttct acctgaccaa ctcctcaggt     600
gtggactaga cggcgtggcc caagggtggt gagaaccgga gaaccccagg acgccctca     659
```

<210> 464
<211> 695
<212> DNA
<213> Homo sapiens

<400> 464
```
accttcattt gaccccatca gcttcagggc cttctttaca tttccactgg cctgatccat     60
```

```
gtatgcaatg ctatttttgc agtgatatgt gatgttctgg gaagctcggc tggagagaag 120
tcgaaggaat gccagctgca catcaaggac atcttcagga agttcaggat tgccgtagct 180
aaactgaaaa ccaccatcca tggactctcc aaaccaaacg tgtttcttct cagcactaga 240
atctgtccac cagtgtttcc gtggaacatt caaaggattg gcacttatgc atgtttcccc 300
agtttccata ttacagaata ccttgatagc atccaatttg catccttggt tagggtcaac 360
ccagtattct ccactcttga gttcaggatg gcagaatttc aggtctctgc agtttctagc 420
ggggttttta cgagaaccat caggactaat gaggctttct atttgtccat taacagactt 480
gagtgaagtc ataatctcat cggtgttgat tttgaaatcc attggttcat ctccataata 540
cggggcaaaa ccgccagctt tttcacctcc aatcccagca atggcagcgg ctccaacacc 600
accacagcaa ggaccagggg caccaggagg tccaggaggg cctggttgcc ctgggtggcc 660
tggggagccc tcagatcctc tttcacctct gttac                             695
```

```
<210> 465
<211> 73
<212> DNA
<213> Homo sapiens
```

```
<400> 465
caggtccaga gctcccaggt ttccaggttg cagtccctcc agtcccagag ctcccagggt 60
ttcggtttcc agt                                                    73
```

```
<210> 466
<211> 507
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G
```

```
<400> 466
agcactggca gaggnagcca aatatagtga tgtgcgccag agataagtat tctcctctcc 60
aagcatattg ctatacaaga ctttaaagac ttcataaaag ccaaacttgc agagtccctg 120
catggagtag ccaaggaaag tcggagccca tcctttagcc aaaccacgaa caccatcctc 180
tttaagtgta actgagaatc cgttaaatat gcccttgtac ttttgggggt ccacctgcat 240
acggcatttc actaaatcca ggggaaccac agcagtgtgt gtcagaccac aacttaagac 300
cccaccaaag ccacacagtg cataatactt cgcggagcca aattcacaac tgtactcttc 360
cacggcggcg gctgccaggt tgcgagggcg gcggggctgg cccgtgggcc ctggggagct 420
gctgcggagg tccccgagac catcgtgcac canctgcaga tgtggcgtgt tgaaggggtt 480
cgcccgcgcc aggtgcgcca cggacga                                     507
```

```
<210> 467
<211> 183
<212> DNA
<213> Homo sapiens
```

```
<400> 467
cctcatgagc taccgggcca gctctgtact gaggctcacc gtctttgtag gggcctacac 60
cttctgagga gcaggaggga gccaccctcc ctgcagctac cctagctgag gagcctgttg 120
tgaggggcag aatgagaaag gcaataaagg gagaagaaa aaaaaaaaaa aaaagggcgg 180
ccg                                                               183
```

```
<210> 468
<211> 129
<212> DNA
<213> Homo sapiens
```

132

```
<220>
<221> misc_feature
<222> (1)...(129)
<223> n = A,T,C or G

<400> 468
gcggccgcgt cgaccggcgc cgtcgggcnc cgggccgggc catggagctg tggacgtgtc  60
tggccgcggc gctgctgttg ntgntgctgn tggtgcagtt gagccgcncn gccgagttct  120
acnccaang                                                           129


<210> 469
<211> 243
<212> DNA
<213> Homo sapiens


<220>
<221> misc_feature
<222> (1)...(243)
<223> n = A,T,C or G

<400> 469
gcggccgcgt cgacnggcca tggagactgt ggcacagtag actgtagtgt gaggctcgcg  60
ggggcagtgg ccatggaggc cgtgctgaac gagctggtgt ctgtggagga cctgctgaag  120
tttgaaaaga aatttcagtc tgagaaggca gcaggctcgg tgtccaagag cacgcagttt  180
gagtacgcct ggtgcctggt gcggagcaag tacaatgatg acatccgtaa aggcatcgtg  240
ctg                                                                 243


<210> 470
<211> 452
<212> DNA
<213> Homo sapiens


<400> 470
cctcaagtac gtccggcctg gtggtgggtt cgagcccaac ttcatgctct tcgagaagtg  60
cgaggtgaac ggtgcggggg cgcaccctct cttcgccttc ctgcgggagg ccctgccagc  120
tcccagcgac gacgccaccg cgcttatgac cgaccccaag ctcatcacct ggtctccggt  180
gtgtcgcaac gatgttgcct ggaactttga gaagttcctg gtgggccctg acggtgtgcc  240
cctacgcagg tacagccgcc gcttccagac cattgacatc gagcctgaca tcgaagccct  300
gctgtctcaa gggctcagct gtgcctaggg cgcccctcct accccggctg cttggcagtt  360
gcagtgctgc tgtctcgggg gggtttttcat ctatgagggt gtttcctcta aacctacgag  420
ggaggaacac ctgatcttac agaaaatacc ac                                 452


<210> 471
<211> 168
<212> DNA
<213> Homo sapiens


<220>
<221> misc_feature
<222> (1)...(168)
<223> n = A,T,C or G

<400> 471
cttctccgct ccttctanga tctccgcctg gttcggnccg cctgcctcca ctcctgcctc  60
taccatgtcc atcagggtga cccagaagtc ctacaaggtg tccacctctg gcccccgggc  120
cttcagcagc cgctcctaca cgagtgggcc cggttcccgc atcagctc                168


<210> 472
```

133

```
<211> 479
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

<400> 472
gccaggcgtc cctctgtctg cccactcagt ggcaacaccc gggagctggt ttgtcctttg 60
tggagcctca ncagttccct ctttcanaac tcactgccaa gagccctgaa caggagccac 120
catgcagtgc ttcagcttca ttaagaccat gatgatcctc ttcaatttgc tcatctttct 180
gngtggcgca gccctgttgg cagcgggcat ctgggtgnca atcgatgggg catcctttct 240
gaagatcttc gggccactgt cgtccactgc catgcagttt gtcaacgngg ctacttcct 300
catcgcagcc ggcgttgtgg tntttgctct tggtttcctg ggctgctatg gtgctaanac 360
tgagagcaag tgtgccctcg tgacgntctt cttcatcctc ctcctcntct tcattgctga 420
ggntgcagnt gctgaggtcc gccttggtgt acaccacaat ggctgagccc ttnctgacn 479
```

```
<210> 473
<211> 69
<212> DNA
<213> Homo sapiens

<400> 473
gagcgatgga gcgtgggtag ggagggtcca cagtgtccac tcgccgtgtg cgaaggttga 60
ctcggtagt                                                             69
```

```
<210> 474
<211> 155
<212> DNA
<213> Homo sapiens

<400> 474
gccgccactg ccgggagagc tcgatgggct tctcctgcgc gccgcccggt gtctggccga 60
gtccagagag ccgcggcgcc tcgttccgag gagccatcgc cgaagcccga ggccgggtcc 120
cgggttgggg actgcagggg aaggcagcgg tggcg                                155
```

```
<210> 475
<211> 282
<212> DNA
<213> Homo sapiens

<400> 475
ggcttcgacg ttggccctgt ctgcttcctg taaactccct ccatcccaac ctggctccct 60
cccacccaac caactttccc cccaacccgg aaacagacaa gcaacccaaa ctgaaccccc 120
tcaaaagcca aaaaatggga gacaatttca catggacttt ggaaaatatt ttttttccttt 180
gcattcatct ctcaaactta gttttttatct ttgaccaacc gaacatgacc aaaaaccaaa 240
agtgcattca accttaccaa aaaaaaaaaa aaagggcggc cg                        282
```

```
<210> 476
<211> 434
<212> DNA
<213> Homo sapiens

<400> 476
ctccaggaca gcgtccagct tggtgtcgtt gaagacgaag tggagcggat ggttgtagaa 60
acgagtgatg gtgctgagcg gcgtgcagtc ttcgggatcc acgaaggcca agtccttgag 120
```

```
gtagagcatg tccacgatgt tggagcgctc ctcctcgtac accgggatgc gcgtgtggcc 180
gctctgcatg atgctggcca ggacgccgaa gtccagcacg gtgctggcgt ccagcatgaa 240
gcagtcttcg aggggcgtga gcacgtcctc cacggtccgg cagcgcagca cgcccttgct 300
gagatcgctg taggggtcgc cgccgccgcg cgccagctcc agcacccgct cccgcagccg 360
cccgggccgc gccgccagct ccagcagctg ccccacgggc agcgcgacgg gcagagtgag 420
caggacggcc aggc                                                   434
```

<210> 477
<211> 314
<212> DNA
<213> Homo sapiens

<400> 477
```
ggcgggcgct agctggctcc gggcagctcg gccttggggg cttcggggcc ccgagacgcg 60
gggcgtatga gtggggcgtg cgctccacgc ggaagtcgga gcctcctccc ctggataggg 120
tgtacgagat ccctggactg gagcccatca cctttgcggg gaagatgcac ttcgtgccct 180
ggctggcgcg gccgatcttt ccgccctggg accgcggcta caaggaccca aggttctacc 240
gctcgccccc tcttcacgag catccgctgt acaaagacca ggcctgctat atctttcacc 300
accgttgccg cctt                                                   314
```

<210> 478
<211> 317
<212> DNA
<213> Homo sapiens

<400> 478
```
aacagagtga tcattccagt taagcggggc gaagagaata cagactatgt gaacgcatcc 60
tttattgatg gctaccggca gaaggactcc tatatcgcca gccagggccc tcttctccac 120
acaattgagg acttctggcg aatgatctgg gagtggaaat cctgctctat cgtgatgcta 180
acagaactgg aggagagagg ccaggagaag tgtgcccagt actggccatc tgatggactg 240
gtgtcctatg agatattac agtggaactg aagaaggagg aggaatgtga gagctacacc 300
gtccgagacc tcctggt                                                317
```

<210> 479
<211> 171
<212> DNA
<213> Homo sapiens

<400> 479
```
aggtgctttg ctagatgctg tgacaggtat gccaccaaca ctgctcacag cctttctgag 60
gacaccagtg aaagaagcca cagctcttct tggcgtattt atactcactg agtcttaact 120
tttcaccagg ggtgctcacc tctgccccta ttgggagagg tcataaaatg t          171
```

<210> 480
<211> 65
<212> DNA
<213> Homo sapiens

<400> 480
```
cccccagtgg aaggctccca ccctggtaga tgaacagccc ctggagaact acctggatat 60
ggagt                                                             65
```

<210> 481
<211> 207
<212> DNA
<213> Homo sapiens

<400> 481
```

```
cacagcgtgc tctgcggggt cactcccact ttgttagtga tgtggttatc tcctcagatg 60
gccagtttgc cctctcaggc tcctgggatg gaaccctgcg cctctgggat ctcacaacgg 120
gcaccaccac gaggcgattt gtgggccata ccaaggatgt gctgagtgtg gccttctcct 180
ctgacaaccg gcagattgtc tctggat                                      207
```

<210> 482
<211> 319
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(319)
<223> n = A,T,C or G

<400> 482
```
cacactgtgc ccttccagtt gctggcccgg tacaaaggcc tgaacctcac cgaggatacc 60
tacaagcccc ggatttacac ctcgcccacc tggagtgcct ttgtgacaga cagttcctgg 120
agtgcacgga agtcacaact ggtctatcag tccagacggg ggcctttggt caaatattct 180
tctgattact tccaagcccc ctctgactac agatactacc cctaccagtg cttccaaact 240
gcacaacacc cnagcttnct cttccagnac aagagggtgt cctggtccct ggcctacctc 300
cccaccatcc agagctgct                                               319
```

<210> 483
<211> 233
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(279)
<223> n = A,T,C or G

<400> 483
```
acaggcccag tggcgcctag ccttcagctg ctgggctctc ccgagcctgc cttagcccat 60
acaaccactt gatcacgcgg gcattgcgct ccaccaccga cacgccatag ggaacgcgct 120
cccgggcccg ctcctcaaca gtcaccgagc tgcggcggga gcagcccect tcagagctgc 180
ccggcccagc actgggccct gccagggaca cnatatccga gctggcccgt gcc         233
```

<210> 484
<211> 194
<212> DNA
<213> Homo sapiens

<400> 484
```
agagcccttg ctggggggtg cctgggagat ggggtaagaa gagctttcat ttgtctggta 60
gatagatagc atgtaagggg gtggttgtcc caggaggcag ctgctgacag gtttgctaca 120
cacagccccg gactgtgttg cctgggtgct cattcagaga ggggctatca tctgggagcc 180
tgtgcccctg ggtc                                                    194
```

<210> 485
<211> 67
<212> DNA
<213> Homo sapiens

<400> 485
```
tccatatcca ggtagttctc caggggctgt tcatctacca gggtgggagc ctcccactgg 60
gggaagt                                                            67
```

136

<210> 486
<211> 70
<212> DNA
<213> Homo sapiens

<400> 486
taccgagtca accttcgcac acggcgagtg gacactgtgg accctcccta cccacgctcc 60
atcgctcagt   70

         <210> 487
         <211> 257
         <212> DNA
         <213> Homo sapien

         <400> 487
 actcccgatt gaagcccc ca ttcgtataat aattacatca caagacgtct tgcactcatg   60
 agctgtcccc acattaggct taaaaacaga tgcaattccc ggacgtctaa accaaaccac   120
 tttcaccgct acacgaccgg gggtatacta cggtcaatgc tctgaaatct gtggagcaaa   180
 ccacagtttc atgcccatcg tcctagaatt aattcccta aaaatctttg aaatagggcc   240
 cgtatttacc ctatagt   257

         <210> 488
         <211> 378
         <212> DNA
         <213> Homo sapien

         <400> 488
actctgctat ggtgctggct tcctttaaac tcaggataga tgccaggtgg gctccgtttc   60
cgtaagactg acactcgagc tcggcatcag accagttcct cagcttcctg aagtaaccat   120
agcaattgga cttgtggtaa aaccatccag gagcacagct gggtctcatg atgatatcac   180
ccaggactcc tgttttggcc aggcagctca gcaataggag cagccgcatg cttctggaag   240
ccatcttcct cctaccctga ggatgtagct agtgcaagga tctcagagac cttactagcg   300
cttctttgaa actcctgggt tctccttgat ctgcaaatct gtytggcaac caagactcta   360
agggcccctg ccttcttc   378

         <210> 489
         <211> 429
         <212> DNA
         <213> Homo sapien

         <400> 489
ccgaggtaca cagaagtttg aatcacaaaa cataattacc acaataaaac acagtgttca   60
agtatcttgg cagagcaatc tgccgcacaa actgcaaatt aaattaacta cacagactaa   120
aaactataca gcctaccatc aacagttgtg cattataaaa aggtagtttc tttccttttg   180
ttttaagtca ggaacaggta gattttaaa aatatatata caagctaaca cacacrgcta   240
tcagcactaa tgcccccccc tcaacttttc cttttctta tagaaaatgg aaagcttaca   300
atacctcstc srtymwrgmr scagrcctwc gagccwgcct grasagggtk wgcmktggar   360
magmtstgkc ctgaggttta gagccgcttt gtgcggggat ggtggaggct agggtggggg   420
tgagaaaag   429

         <210> 490
         <211> 532
         <212> DNA
         <213> Homo sapien

         <400> 490

137

```
ttggattgcc acacggctca cattgcatgc aagtttgctg agctgaagga aaagattgat     60
cgccgttctg gtaaaaagct ggaagatggc cctaaattct tgaagtctgg tgatgctgcc    120
attgttgata tggttcctgg caagcccatg tgtgttgaga gcttctcaga ctatccacct    180
ttgggtcgct ttgmgktgtg atatgagaca gacagytgcg gtgggtgtca tcaaagcagt    240
ggacaagaag gctgctggag ccggcaaggt caccaagtct gcccagaaag ctcagaaggc    300
taaatgaata ttatccctaa tacctgccac cccactctta atcagtggtg gaagaacggt    360
ctcagaactg tttgtttcaa ttggccattt aagtttagta gtaaaagact ggttaatgat    420
aacaatgcat cgtaaaacct tcagaaggaa aggagaatgt tttgtggacc actttggttt    480
tcttttttgc gtgtggcagt tttaagttat tagttttttaa aatcagtacc tc            532
```

        <210> 491
        <211> 567
        <212> DNA
        <213> Homo sapien

        <400> 491
```
tcgaggtaca aaagcccttc aaaaggagtt cagcttttat aaacaccaaa acactctctg     60
cctgtaaaat gtttttgctg aaatttgtat cattaactct caaatttaca tcttcatgtt    120
tgagatacgc ttttaggact gtctatgcat gtagactttg gtcaactctc tcctcctccc    180
tcaataaatc agttaactta aaaaatatat tgtgaccatt tttataaaat acatgttcat    240
aaaacagatc aacatattta gcttatacag aaataaaatt aagtcaatcc actcacaaag    300
aatttctatt ttgtaaaaat gtagcttgta tttcagtata ataaaatctg atgcaaaaaa    360
cctgcccggg cggcaagtgt gctggaattc tgcakatatc catcacactg gcggscgctc    420
gagcatgcat ctagagggcc caattsgccc tatagcggcg cattaagcgc ggcgggkgtg    480
gtggwtacgc gcasygtgac cgmtacactt gccarcgccc tagmgcmcgc tcctttcgcw    540
ttcttccctt cctytctcgc cacgttc                                        567
```

        <210> 492
        <211> 422
        <212> DNA
        <213> Homo sapien

        <400> 492
```
agtgtgctgg aattcgccct tggccgcccg ggcaggtaca agactcaata atcacctgac     60
tgagctccaa ttaactgagg agaaacgggg tggaggagag ggctggttgc tattcagact    120
tgataatgag attgatctgt cccatggaga gtgaaagttc agttccactt ctgcctcctt    180
ctttccatgc tgtcctcatg ctctttatcc tcacttcctc agtcccttca acactcaaaa    240
tctgatttta tttctctctc acacgtatca ggggcagttt ctgaagttgc tgaggttgaa    300
ttttcttcac aaacctctat aaaacatcag cagagaacat ataaatacat tttgattagc    360
atacattgca aaatttctcc cacaatgtca ggggatgaaa gcaggtggtc cccactgaga    420
gt                                                                   422
```

        <210> 493
        <211> 318
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(318)
        <223> n = A,T,C or G

        <400> 493
```
agtgtgctgg aattcgccct tagcggccgc cctggcaggt aagctttttt tttttttttt     60
ttttttgat gattaacatc tttaattcaa atgkaaaagt tcaatacaag ccatttatag    120
ggcttgagat ttgttggtct tttaaaaaca araaatgggg aaatgcaaca aaatgacctt    180
tccactttc aaaagctttc aagtaaagga tagatcatag ggccataaaa gatccattta    240
atsaaaccca cttttyaccc cctaccaatt gtcttacacc cantccacaa tcttaataca    300
```

```
tattcctgaa natttaca                                                 318

        <210> 494
        <211> 360
        <212> DNA
        <213> Homo sapien

        <400> 494
accttttact acaacaagta aacatgcata ataaagtagg attcatccaa tgtctgacct     60
ttctttgcat caaaagaaca tttccggcca ggcacggtgg ctcacgcctg taatcccagc    120
actttgggag gccgagccag gtggatcacg aggtcaggag atcgagacca gcctggctaa    180
catggtgaaa ccctgtctct actaaaaata caaaaatgag ccgggcatgg tggggggggca   240
ccgtagtccc agctacttga gaggctgaga caggagaatg gcgtgaaccc ggggggcgga    300
gcttgtagtg agccgagatc gcgccactgc actccagcct gggtgacaga gtgagactcc    360

        <210> 495
        <211> 329
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(329)
        <223> n = A,T,C or G

        <400> 495
gaggtctggg atggggcttc actgctgtga cttcctcctg ccaggggatt tggggctttc     60
ttgaaagaca gtccaagccc tggataatgc tttactttct gtgttgaagc actgttggtt    120
gtttggttag tgactgatgt aaaacggttt tcttgtgggg aggttacaga ggctgacttc    180
agagtggact tgtgtttttt ctttttaaag aggcaaggtt gggctggtgc tcacagctgt    240
aatcccagca ctttgaggtt ggctgggant tcaagaccag cctggccaac atgtcagaac    300
tactaaaaat aaagaaatca gccatgaaa                                      329

        <210> 496
        <211> 292
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(292)
        <223> n = A,T,C or G

        <400> 496
acctgggatg aggtgggtgg agctttgaat ctaccactat ccaggccaca cacctagaag     60
ctctggtttc attgtttcat tgatttcatt gttttgattg atgctgacct taggcagcag    120
agttttcaat gctctccagg tgtttctaaa gtgcagacaa gtttangacc gtgcttgagg    180
gtgaagggca ggactgtgat ggggaggggc aaatatgggg cccttggggt gcaggcaatg    240
gttttccttg acctgaatgg gggtctcaca ggtgttgcat atacatatac gt            292

        <210> 497
        <211> 549
        <212> DNA
        <213> Homo sapien

        <400> 497
tcgaggtacc gaccatagag caagaatcaa gattctgcta actcctgcac agccccgtcc     60
tcttcctttc tgctagcctg gctaaatctg ctcattattt cagaggggaa gcctagcaaa    120
```

```
ctaagagtga taagggccct actacactgg cttttttagg cttagagaca gaaactttag    180
cattggccca gtagtggctt ctagctctaa atgtttgccc cgccatccct ttccacagta    240
tgcttcttcc ctcctccct gtctctggct gtctcgagca gtctagaaga gtgcatctcc     300
agcctatgaa acagctgggt ctttggccat aagaagtaaa gatttgaaga cagaaggaag    360
aaactcagga gtaagcttct agcccccttc agcttctaca cccttcggcc ctctctccat    420
tgcctgcacc ccaccccagc cactcaactc ctgcttgttt ttcctttggc catgggaagg    480
tttaccagta gaatccttgc taggttgatg tgggccatac attcctttaa taaaccattg    540
tgtacctgc                                                             549
```

```
        <210> 498
        <211> 412
        <212> DNA
        <213> Homo sapien


        <400> 498
cttgaagctg ggaggtggag gttgcagtga gccgagatca caccactgta ctccagcctg     60
ggcaagagaa tgaaactctg tctcaaaaac aaaaataaaa acaaaaaaaa aactcttgtc    120
attctggaaa tgtccacaat tcagtcttca cctgcctcca tcctcatgaa ggcaccaggg    180
gagcgcggtg ggctcacctg atttcttggt taggtctgtt ctgttccttt tttatgcggg    240
gtctgtcggt gggcactgct ccaatgtgag gggtccaggc tccatcgtag cctcttaacc    300
agctcagtgc caggaagggt ggactttgac aaaaacccac ctcaaatctg cactccccaa    360
cctggagtgc aacctgtggc aagctcccta ggctctctgg gcctcagctt cc             412
```

```
        <210> 499
        <211> 447
        <212> DNA
        <213> Homo sapien


        <400> 499
acttttaaga atatactttg atttaatatg tatgttagta aaactccacg tgttgtaacc     60
attattatgt ttttgttttt aaaatgggga tgtaatacta ataaccacta cctataaaat    120
aaagcacaca attgttccgg cgattttaca aatctttttt tccaggtgta aagtctacaa    180
aaattccaaa aaattagaga acactgaaaa catattaaag tttgacatcc aactttatag    240
tatttccatg ttaccctgaa agataactta aaaaatatgg ccttcttaga acaggccact    300
ctgctattat aaaaaattgg tgacagcaag aaattgtatc actgatatgt ggaatttttg    360
taaatagttt tctctccaaa tcattagaaa aatgttcaaa aataaaaaca aaataaaata    420
tggtggtggt ccctaaacta ttttgaa                                         447
```

```
        <210> 500
        <211> 527
        <212> DNA
        <213> Homo sapien


        <400> 500
gtttgcttct tgcatctgat taactagaat atttctcttt ccccctttta atttgtgatg     60
tcacttgacc ccatttatgt gtaggagcac tacaccattg gtttccaata ctgcacacat    120
aagatacata cttgtgtgca gaaagtatct tcctccaggc ttgtaatacc cttcacatgg    180
aagattaatg agggaaatct ttatattctg tataaaaaca aaagcaaatt tatatactaa    240
aatcatttgt ctaaaaattt aagttgtttt caaataaaaa ttaaatgca tttctgatat     300
gcactgattg tgttgcctcc agcttttttt gctctctatg agtgactact taagtcactt    360
gttgagaggg attatttact aattatatac ttctcattcc tgtaactcca ttccctttaa    420
acagtggtga tatcaaatat acttccatcc attgaatggg gtattttaa caacaacaaa     480
agtgatatac taaaaaatgt attgcttaag gcttattgaa tcatttt                  527
```

```
        <210> 501
        <211> 304
        <212> DNA
        <213> Homo sapien
```

140

```
        <400> 501
gaggttgccg accaaagaga ccattgagca ggagaagcgg agtgaaattt cctaagatcc     60
tggaggattt cctaccccg tcctcttcga daccccagtc gtgatgtgga ggaagagcca     120
cctgcaagat ggacacgagc cacaagctgc actgtgaacc tgggcactcc gcgccgatgc     180
caccggcctg tgggtctctg aagggaccccc cccccaatcg gactgccaaa ttctccggtt     240
tgccccggga tattatagaa aattatttgt atgaataatg aaaataaaac acacctcgtg     300
gcaa                                                                    304


        <210> 502
        <211> 425
        <212> DNA
        <213> Homo sapien


        <400> 502
actgattgtc atcctgactt tggcattggc agctcttata ttccgacgaa tatatctggc     60
aaacgaatac atatttgact ttgagttata atatggtttt gtgacttatg agctgtgact     120
caactgcttc attaaacatt ctgcattggg tataatctaa gaattgttta caaaaagatt     180
attttgtatt tacccttcat tcctttttttt gatccttgta agtttagtat aaatatatct     240
agacattcag actgtgtcta gcagttacgt cctgcttaaa gggactagaa gtcaaagttc     300
cttgtctcac tatttgatct gctttgcagg gaaataactt gttttttctc atgtttcatc     360
ttcttttat gtaaatttgt aatactttcc tatattgccc tttgaaattt ttggataaaa     420
gatga                                                                   425


        <210> 503
        <211> 256
        <212> DNA
        <213> Homo sapien


        <220>
        <221> misc_feature
        <222> (1)...(256)
        <223> n = A,T,C or G


        <400> 503
accagcagtg tgtcaggtgc tgcagagcgt tcttggagaa ggcccactga ggcaggttcg     60
tgccctgctg cggccagcct gactagaccc caccctgagg tcctgcattt ctcagtcggt     120
gtgtaatcac gttccagggc ccaaagccca gctctttgtt cagttgactt actgtttctt     180
accttaaaaa gtaattgtag atggaaatca gttgtgtttg gcangagaat caataaaaat     240
ctttgattca gacagc                                                       256


        <210> 504
        <211> 255
        <212> DNA
        <213> Homo sapien


        <220>
        <221> misc_feature
        <222> (1)...(255)
        <223> n = A,T,C or G


        <400> 504
actgttaatg atgttaatga ttttttttta aactcatata ttgggatttt caccaaaata     60
atgcttttga aaaaaagaaa aaaaacgga tatattgaga atcaaagtag aagttttagg     120
aatgcaaaat aagtcatctt gcatacaggg agtggttaag taaggnttca tcacccattt     180
agcactgctt ttctgaagac ttcagttttg ytaaggagat ttaggttkta ctgctttgac     240
tggtgggcct ctasa                                                        255
```

141

```
<210> 505
<211> 485
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(485)
<223> n = A,T,C or G

<400> 505
agcttggtcc gagctckgat cccctagwaa cgccgccagt gtgctggaga attcccccctt      60
agcgtggtcn ttgcccgagg tacagaaaac ccaaaggcaa ccacatagca tatgtaaaat     120
gtgcaaatca ctttaaaatg caagttattc tatagcattt gcaagataga atttcactgn     180
aattagggaa tctagttcat cctaacttaa tagtcttttg catgtataga caatgcaatt     240
ctacaaggca caactcagcg ttgatgctaa agtatgaaac acatcctcag attatttatt     300
tgaaaatatt aaaatagcat cgtttattat tttttaatga gtcatgagct catttctaaa     360
gcttcataaa gcattacact gataacatat gtgtggtcag gacaaactgt tccctgaact     420
taagaggtga aggacaagac cccatattat tatcctgtat taaaaaagga aatatacata     480
tatgt                                                               485
```

```
<210> 506
<211> 230
<212> DNA
<213> Homo sapien

<400> 506
acaactccaa aaggagacat tggagaagaa ccaagctggg tctataagga attgcacatg      60
agatggcaca catatttatg ctgtctgaag gtcacgatca tgttaccata tcaagctgaa     120
aatgtcacca ctatctggag atttcgacgt gtttcctct ctgaatctgt tatgaacacg      180
ttggttggct ggattcagta ataaatatgt aaggcctttc tttttaaaaa              230
```

```
<210> 507
<211> 179
<212> DNA
<213> Homo sapien

<400> 507
acctacttct ccacaccgct gttgcttggg aaaaagggca tcgagaagaa cctgggcatc      60
ggcaaactct cctcttttga ggagaagatg atctcggatg ccatccccga gctgaaggcc     120
tccatcaaga agggggamta tccsgtgaac accctgaaaa gakccgctgt gacgggtgg      179
```

```
<210> 508
<211> 321
<212> DNA
<213> Homo sapien

<400> 508
acagagtttt atataaattt aaaccaattt ttaaaacaaa actgcggaca ccaccataaa      60
aatggaatca aaagaaagtt aatttatgaa attaagaggt cagcagaata tactcagtga     120
tggaagacac ttgggaaagt cttttaata gaacaagaac gatcttaatt taagaatatt     180
atcctggttt aacaacagtg ccctgtttac aacagattgt ccctatctc atctgcagcc     240
gaggaataaa ggattctgat tagaaagagg gttgcctaca gattagtaag caattccttg     300
gatcttatgc acagaacttg t                                             321
```

```
<210> 509
<211> 176
<212> DNA
```

142

<210> 513

<211> 422

<212> DNA

<213> Homo sapien

<213> Homo sapien

<400> 509
```
acgtgggata cgggtcatgg gcagagctcc tggcctcagt gatgcctcct gatctatcca        60
taggcctgga agatcagcac tgggatgacg atgagcagaa tggtcatgag gatgcccasa       120
atcagggccc acatgttcag gcacttggcc ggtggatgca targcctggg cccctg          176
```

<210> 510
<211> 298
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(298)
<223> n = A,T,C or G

<400> 510
```
accaacttta tatcatatgt ttatacaatt taatttaaaa attcatttta aggaagacag        60
ataatttgaa agactttttgt ttttcttgac ttaattcatg aagtatcatt ttttgactga       120
```

```
accaacttta tatcatatgt ttatacaatt taatttaaaa attcatttta aggaagacag        60
ataatttgaa agactttgt ttttcttgac ttaattcatg aagtatcatt ttttgactga        120
gtctccattt acttcattct taatgattat tgtcatccct ttaaatctgt gccttttttct      180
tcttgagcga agctgtttga gtaaacctgt tgaagagtgt ttgtgtcttt tgtgcttttt       240
tgttgntatt aaaacaccaa ctaaacctta tagtcaagac aaggctctat gtttctgt         298
```

<210> 511
<211> 345
<212> DNA
<213> Homo sapien

<400> 511
```
acagatttt gtatagctga taagattctc tgtagagaaa atacttttaa aaaatgcagg         60
ttgtagcttt ttgatgggct actcatacag ttagatttta cagcttctga tgttgaatgt       120
tcctaaatat ttaatggttt ttttaatttc ttgtgtatgg tagcacagca aacttgtagg       180
aattagtatc aaatagtaaat tttgggtttt ttaggatgtt gcatttcgtt ttttttaaaaa     240
aaattttgta ataaaattat gtatattatt tctattgtct ttgtcttaat atgctaagtt       300
aattttcact ttaaaaaagc catttgaaga cctaaaaaaa aaaaa                       '345
```

<210> 512
<211> 459
<212> DNA
<213> Homo sapien

<400> 512
```
acttatttca acaattctta gagatgctag ctagtgttga agctaaaaat agctttatt         60
atgctgaatt gtgattttt tatgccaaaa ttttttttagt tctaatcatt gatgatagct       120
tggaaataaa taattatgcc atggcatttg acagttcatt attcctataa gaattaaatt       180
gagtttagag agaatggtgg tgttgagctg attattaaca gttactgaaa tcaaatattt       240
atttgttaca ttattccatt tgtatttttag gtttcctttt acattctttt tatatgcatt      300
ctgacattac atattttta agactatgga aataatttaa agatttaagc tctggtggat        360
gattatctgc taagtaagtc tgaaaatgta atattttgat aatactgtaa tatacctgtc      420
acacaaatgc ttttctaatg ttttaacctt gagtattgc                             459
```

<210> 513
<211> 422
<212> DNA
<213> Homo sapien

<400> 513

143

```
gccccgtagt gatgagcact gactggttca ctggccacat tttagttctt cataataata        60
ggccacaaaa gggctctgtg gtttgcctcc atgtgcactg gcccctcccc acccctaggg       120
ggcactcagt agctgctgag aaggcctgtc cacgaggctg ttggaacccc tccaataaat       180
acttagaggt agtgtatctg atgcttgttt tcgtggagaa aattgtattg gagaacttaa       240
aacatcacga atatttttaa taggatccgc agacacccaa aggagaagct tggtcttttc       300
caggtatttc caacttgagt tcagcccaaa gcctttgaaa ggaatgcatt accacatgac       360
cacatgctga gaccccatgg ggtctaacac gggacctaag aaagtctctg cagccagata       420
gt                                                                       422
```

```
        <210> 514
        <211> 326
        <212> DNA
        <213> Homo sapien
```

```
        <400> 514
accagtatag taatatctgt atactaacta gggctttgta ttgtcaataa ttttttaata        60
attttttaat gaggtattta ccactgaaga aatatgataa tataaaacca tcaaatttta       120
taattgagat gatactctgg aaaaacatgt catttcattt tcagaaaact cttaagctct       180
cttcagtctc tgtaatgttt ctgattgcat gtttcttcat gaaaagtatg ttgttgtttt       240
gatagtaata ataataaatg taggctcagt tctttcccag gattttcatc aaaaagcttt       300
aagtgcctaa ccctgcttgt ctctgt                                            326
```

```
        <210> 515
        <211> 323
        <212> DNA
        <213> Homo sapien
```

```
        <400> 515
accagatgta gctaggaaaa cccaaacgtt ccttggatcc tgagacagct ggtaagcacc        60
caggccggct agactgccaa agagcagccc tgcagccagg gacggcacgc tgcctgcttt       120
tacatagcca atgatcccac cagaagcaac cagtgctgcg tagccaaagc caaaccaatg       180
caagggcact actgagccag tgtcctgcat ttttctcttc tctgtccaga caggagacta       240
ccccaggcct gcaccggtct cacgaaggcc ccggctgtct acaagggcgc gcaagccgca       300
ggaatgactg cgaggtgtcg ccg                                               323
```

```
        <210> 516
        <211> 403
        <212> DNA
        <213> Homo sapien
```

```
        <400> 516
accccgttgg ggttcatttc ctgcccaaga agctggatga ggcagtggct gaagcccacc        60
tgggcaagct gaatgtgaag ttgaccaagc taactgagaa gcaagcccag tacttctaaa       120
tactgagtga atacatcaca gattgcataa agtgcatgat tgcaagttgt tgtcatccat       180
tcagctttct ctgtctgttg ttctggcaat ttcatattgt caaagattct gaaaacaatt       240
ctaaataaat cctgccacca gtgtttctca taagtgtggc catatgtttt cattatttca       300
aacattactg ttaaacccct ggttcttaca tctaatttgc atctattgat gatacaggat       360
aactcaaaga gaattgggaa ccatcctctc acccacaccc tgt                         403
```

```
        <210> 517
        <211> 360
        <212> DNA
        <213> Homo sapien
```

```
        <220>
        <221> misc_feature
        <222> (1)...(360)
        <223> n = A,T,C or G
```

144

```
<400> 517
acctgaacga agtcgcgggc aagcatggcg tgggccgtat tgacatcgtg gagaaccgct      60
tcattggaat gaagtcccga ggtatctacg agaccccagc aggcaccatc ctttaccatg     120
ctcatttaga catcgaggcc ttcaccatgg accgggaagt gcacaaaatc maacaaggcc     180
tgggcttgaa atttgctgag ctggtgtata ccggcttctg gcacagccct gagtgtgaat     240
ttgtccgcca ctacatcgcc aagtcccagg agcgagtgga agggaaagtg catgtgtccg     300
tcctcagggg ccaggtgtac ctgmccgggc ggccnctaac ggcgaattmt gcagatatcc     360

       <210> 518
       <211> 255
       <212> DNA
       <213> Homo sapien

       <400> 518
cataaatatt atactagcat ttaccatctc acttctagga atactagtat atcgctcaca      60
cctcatatcc tccctactat gcctagaagg aataatacta tcgctgttca ttatagctac     120
tctcataacc ctcaacaccc actccctctt agccaatatt gtgcctattg ccatactagt     180
ctttgccgcc tgcgaagcag cggtgggcct agccctacta gtctcaatct ccaacacata     240
tggcctagac tacgt                                                       255

       <210> 519
       <211> 449
       <212> DNA
       <213> Homo sapien

       <400> 519
accttcctct caattttgct gtgaacctga aatggcttta aattaatact cttattttt       60
atttaattta attacataaa ttaaacctta ccatgaccaa attgtgttag gacggcctgc     120
tatctacagc acagtgtgtc atttgcagat ttgtggttac ctataccacg ctaggtgttt     180
tgacatgttt agtatttctg ctttacagtg ctgaattcca tattttagaa gctatgaaag     240
tccttttatg aaaaagttac tgattgcttc tcagttatta ggaaaacagt tgtttcacaa     300
ttattatgta gatatgatgc ccaaatatca ttttttagtat atcttgtcga tctttaagtt     360
gttactattg tgttattcat gtctttaaat cagataccaa atattttta ggaaagaaaa      420
atgttattac tgtcattagg ttggctttt                                        449

       <210> 520
       <211> 92
       <212> DNA
       <213> Homo sapien

       <400> 520
accccccatca cagcagtcaa acagcctgag aaagtggcag ctaccaggca ggagatcttc      60
caggagcagt yggcaryagg gccagagatc cg                                     92

       <210> 521
       <211> 123
       <212> DNA
       <213> Homo sapien

       <400> 521
acagagggga caacaatgaa tcagaacaga tgctgagcca taggtctaaa taggatcctg      60
gaggctgcct gctgtgctgg gaggtatagg ggtcctgggg gcaggccagg gcagttgaca     120
ggt                                                                    123

       <210> 522
       <211> 303
       <212> DNA
```

145

<400> 522
```
acaaaaaaat gaatgttaca aaaatcacgt aaaaaaaact aggctcaagg aagcagccgc      60
ccttgcaaga gggctcaagg cacctgagag gctgagaaga ggccaacctg gccatgggcg     120
tggctgcatg gacagctctt ccctcctgcc cttccccaga tgcccttccc tcctgccccg     180
aggggcacac tccctctccc caattacagg tgctacaaaa ctgccttgaa taccaccgcc     240
aaggcactgc cagagatgaa atgggccctg agcagangcc tcangctctc cctcccccgt     300
agc                                                                  303
```

<210> 523
<211> 424
<212> DNA
<213> Homo sapien

<400> 523
```
acagtgcatg gtgctgtcac ttggaaagcc tttcaatgtt gtcttcagat tgttgtgatg      60
aatatgaaac atgcagaccc tcctttataa agaaaaagac cttaaaactt gaatatgaga     120
taattttaca tttttaaaagt ttatttgatt ttcatattat tcactttcaa agcccttca     180
aatagaaaag gtatgaactt ttggggggat aatttatgta tcgtaaactt attagaacaa     240
aatattcctg atgtataatg agttgtttta tttatacaac ttttttcaatg gtagtttgca     300
ctattcttta ttatgctaca ggtttatta ttatgaaaca aaggaatatg tattttatgt      360
attttaccat gcataggtta actctttgcc acagatttat tggtcttgat acacctaaaa     420
taaa                                                                 424
```

<210> 524
<211> 172
<212> DNA
<213> Homo sapien

<400> 524
```
acaatttcat tgcagacaca aagacttaag agtttcaaag aattttttaa aataaaaaaa      60
aaatttgcac ttattcctca caaaatcttc acttttggaa ctatcccaat tgaagctaca     120
cactgaattt attaatacag cattaagttt ctttgtgtaa aaaaatcttt gt             172
```

<210> 525
<211> 256
<212> DNA
<213> Homo sapien

<400> 525
```
actccttccc agttttttct ttatactgag ccttcaggga cagtaagcat tctacagctt      60
catttatttt agccttaggg gatttttcag cttttagctt acgaaccacc tccccttgtg     120
cagcaacttc atcatacaga gatttacttt ccagaatact tgctgaggaa ttagaagaaa     180
tattctgtcc tatttcagca ggagggtttc caggtttata ttcctggcca gttttctcct     240
tatattcaag ctttca                                                    256
```

<210> 526
<211> 479
<212> DNA
<213> Homo sapien

<400> 526

```
actggagatg tatttgataa ccaaggtttt aggtaaattt tcaccagtat tagttctatt      60
tgcaaactga aaaatgttgt aggcttaata taaaataacc acattagtga acattatatc     120
tcttagaaga aaggccatat tttgctcctg cttctgtaaa aatattattt gtttgaaggg     180
gaaataatgg tagtgtgacc tttcacttaa ttcctactcc cttaatgtga gagagacaaa     240
atgagctgaa gaaggaaaat tctggagtta cactccacaa ccttgaacat actgacggac     300
atctctgttt tgacaacgat ttctccatgc cacccatgct ctaatgcctt gtggatcacg     360
gacaaccctc tttgcacaag ctacagcatc agcgatgtta tcttgcagca aagcactgca     420
ggataaatga caggcattaa ctgctcctgg ggttttgcca tcattacacc agtagcggc     479
```

```
        <210> 527
        <211> 220
        <212> DNA
        <213> Homo sapien
```

```
        <400> 527
accaaattga agggtttaga ggccctcaaa tgggcatcac tcataaaggc aattttcatg      60
gtttaatata gaaattactc taatgtgaga acacaacatg ggaactattc aaaatacacc     120
tttctatgca aaattgagtt tgyatctatt ttagcatttt aaatgagcac tctgcaactg     180
agaccaaata tcaatcatct cttgaggttt tctactatgt                           220
```

```
        <210> 528
        <211> 373
        <212> DNA
        <213> Homo sapien
```

```
        <400> 528
acamcatcga tgaaattcag acatacaatg taaagttgaa ataatcccaa attattttac      60
attatttatg tatactttac aaataacaca aatatggaaa tgttttcttg gaaagctgtt     120
ggaactgtaa gcactgcaac gtatgaaaga aacatattta gcaataaaaa atttaataat     180
atcctacaac tgaattagtt gcatatttat accattcaaa atcttgattt taacctcatt     240
cactcctttg aaaaatacat tcctcttttg ttcttttaaa tgcaaaatta gtggcagttg     300
cagcaaaaac gccgaaattc tataagaaaa aaactgattt accccaaaca tatcattcag     360
cacaaactgc ggt                                                       373
```

```
        <210> 529
        <211> 344
        <212> DNA
        <213> Homo sapien
```

```
        <400> 529
acatttctaa gtcaaacact tgtgactttt gctttaattc catgaatgtt cctgcctcct      60
tgatatttgt atttattctt tttttctcta gagtagaggt ataattgtgt gatatttcag     120
aaatacagat aaatgattca aaaagtcaca gttaaggaga atcatgtttc tttgatcatg     180
aataactgat tagtaagtct tgcctatatt ttcctgatag catatgacaa atgtttctaa     240
ggtaacaaga tgagaacaga taaagattgt gtggtgtttt ggatttggag agaaatattt     300
taatttttaa atgcagttac aaattataat gtattcatat ttgt                     344
```

```
        <210> 530
        <211> 354
        <212> DNA
        <213> Homo sapien
```

```
        <400> 530
accattgctc tttcctagct aaccctagat atggcagctc tttaatgtac ctgagatcct      60
ggtgcacaac atagtgatct tcatgcgaac ttcagtgaag atttcataca ttggcctcat     120
gacccagagc tccttggaga cacatcacta tgtggattgt ggaggaaatt ccacagctat     180
ttaacaactg ctattggttc ttccacacag cgcctgtaga agagagcaca gcatatgttc     240
ccaaggcctg agttctggac ctacccccac gtggtgtaag cagaggagga attggttcac     300
```

147

ttaactccca gcaaacatcc tcctgccact taggaggaaa cacctccta tggt   354

<210> 531
<211> 418
<212> DNA
<213> Homo sapien

<400> 531
acacatccca tcttcaaatt taaaatcata ttgtcagttg tccaaagcag cttgaattta   60
aagtttgtgc tataaaattg tgcaaatatg ttaaggattg agacccacca atgcactact   120
gtaatatttc gcttcctaaa tttcttccac ctacagataa tagacaacaa gtctgagaaa   180
ctaaggctaa ccaaacttag atataaatcc taccaataaa atttttcagt tttaagtttt   240
acagtttgat ttaaaaacaa aacagaaaca aatttcaaaa taaatcacat cttctcttaa   300
aacttggcaa acccttccct aactgtccaa gtatgagcat acactgccac tggctttaga   360
tactccaatt aaatgcacta ctctttcact ggtctgaatg aagtatggtg aaacaagt   418

<210> 532
<211> 583
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(583)
<223> n = A,T,C or G

<400> 532
cgtcccaaca attatattac taccactgac atgaccttcc aaaaaacaca taatttgaat   60
caacacaacc acccacagcc taattattag catcatccct ctactatttt ttaaccaaat   120
caacaacaac ctatttagct gttccccaac ctttttcctcc gaccccctaa caacccccct   180
cctaatacta actacctgac tcctacccct cacaatcatg gcaagccaac gccacttatc   240
cagtgaacca ctatcacgaa aaaaactcta cctctctata ctaatctccc tacaaatctc   300
cttaattata acattcacag ccacagaact aatcatattt tatatcttct tcgaaaccac   360
acttatcccc accttggcta tcatcacccg atgaggcaac cagccagaac gcctgaacgc   420
aggcacatac ttcctattct acaccctagt aggctccctt cccctaccca tcgcgactga   480
tttcactcac aacaccnnta ggctcactaa acattctact actcactctc actgcccaag   540
aactatcaaa cttcctggcc aacaacttat atgactagct tac   583

<210> 533
<211> 529
<212> DNA
<213> Homo sapien

<400> 533
gaggtactta ataaccaagt ctcggaacac tgagccatca cctgcaatgt ttcctagagc   60
ccagacagct tgttcactga tgtgagcatg gggagatgcc aacagagaaa tgaatgctgg   120
gatggcacct ccatctacca cagccttggt ttgttctgat gtcccagaag caatgttagt   180
gagtgcccaa gcagattcaa actgaatggg actacaatca gttctgccca agaaggacac   240
aaatttcgga atcaaaccag cccggattat gttgtctatg gggggctgtt tttctctgga   300
aagtagtttc ctggcagctt gagtagcttg gagctgattt tccacattgc tgctatttat   360
gcctttgaca atgtcatcaa cagaccaatt tacagtgccc tggttgttgc ggttttcctg   420
cagcggagaa gtagcatcat caggaaatga gcttacattt ctcctcttca gcatctggtc   480
atccttctta gctttcctca gctccacatt gacctctatt ctgcgacgc   529

<210> 534
<211> 297
<212> DNA
<213> Homo sapien

148

```
<400> 534
actcattaat attattttgt tttgagaaag ccagaaatga ttctaagaaa taaacaataa      60
taataaaaga tgtaattaat atactgtatc ccttttaagc caaagcacac ttttttacctc ·  120
aagactgttc tgacttttac attcttaatt tcctttgtcc aaaataggac cccattttaa     180
atagagttca tttgaattga gttcataatc taaagtcact tttccccaca agatgttttc     240
atttcagtat ataaactgct aagcggcaaa tgactaagtc agttataaag aatttgt        297

        <210> 535
        <211> 373
        <212> DNA
        <213> Homo sapien

        <400> 535
actttccagg gcacagcctg gacgaatgat gccaaacttt ccgggcacag acaaatcaac      60
cacagttgag ccaaggcgac actcggggct ctggccatcc ccaatttgtc ccccatcaat     120
aaccaaggac aactgaggcc agagatcctg gaactcctcg acattcagag aactggcctg     180
ggagctgagg ttggcactag tgagagcaag cggaccctca aacatctgag ccaagtcttg     240
cataaaagca tgatcaggaa tccgaatgcc tacaagaggc gtaaaagggt ttaggtcctt     300
gttgagctcc tccgagcgtt ccatcaccag ggtcactggt cctggcagta ggtctttcag     360
gagcccctca ggt                                                       373

        <210> 536
        <211> 254
        <212> DNA
        <213> Homo sapien

        <400> 536
acatgctcca ttaaattaaa tgtcatccaa catttatcaa atattgtctt agttacagct      60
tgatacctat ctaaattcat attcgagcaa aactaggccc cgaaagtgcg tttgtggctc     120
tgcacctcca gaagtgagtt caaaaaacct gcagctcatc agaactgcaa caataactct     180
taatattttc ttgtgacaaa aaaaaaaatc aagtttactt caatatattt tcaaatattt     240
actggaagta atgt                                                      254

        <210> 537
        <211> 449
        <212> DNA
        <213> Homo sapien

        <400> 537
acagacttgt ttttgagtgt tgagtagcag ggacaaaata agggaatgtt attttttaag      60
aaaattcatt ttcattgttg tctccttcct tttctgtgaa agtcctcata ctgagaaatt     120
tgtatatttt atattaaatc acttactatt gattttgtt gtgattttca aaggtggatt      180
cccacagata aaatcttggc tattgcccaa aacatagtaa agggtcacgt gtgacttttt     240
ataataggaa gaaaattctg cctttgtgag tgcacatgtc cacatttcat ccctccttcc     300
ctcaaaaccc tagagagggg cattaaagaa ttgttgatgt atatgcaatg tctgttaagc     360
atgcactatg tatttcatcc tcatttattg ggtctgggac tgaagttttt agccagcatg     420
gacctaacct acttttggg ataaaattc                                       449

        <210> 538
        <211> 328
        <212> DNA
        <213> Homo sapien

        <400> 538
actcagcgcc agcatcgccc cacttgattt tggagggatc tcgctcctgg aagatggtga      60
tgggatttcc attgatgaca agcttcccgt tctcagcctt gacggtgcca tggaatttgc     120
catgggtgga atcatattgg aacatgtaaa ccatgtagtt gaggtcaatg aagggggtcat     180
```

```
tgatggcaac aatatccact ttaccagagt taaaagcagc cctggtgacc aggcgcccaa     240
tacgaccaaa tccgttgact ccgaccttca ccttccccat ggtgtctgag cgatgtggct     300
cggctggcga cgcaaaagaa gatgcggc                                        328
```

        <210> 539
        <211> 506
        <212> DNA
        <213> Homo sapien

        <400> 539
```
tcgaggtact ttggcctctc tgggatagaa gttattcagc aggcacacaa cagaggcagt     60
tccagatttc aactgctcat cagatggcgg gaagatgaag acagatggtg cagccacagt    120
tcttttgatg tccaccttgg tcccctggcc gaacgtccag cggagagact gttggcagta    180
ataaatggca aaatcatcag gctgcaggct gctgatggtg agagtgaatt ctgtcccaga    240
tccactgccg ctgaaccttg atgggacccc actatgtaaa gtagacgcct tatagatcag    300
gagattaggg gctttccctg cttctgctg ataccaggcc aaccaattat taatattctg     360
actggcccgg caagtgatgg tgactctgtc tcctacagat gcagacaggg tggaaggaga    420
ttgggtcatc tggatgtcac atttggcacc tgggagccag agcaagcagg agccccagga    480
gctgagcggg gaccctcatg tccatg                                         506
```

        <210> 540
        <211> 519
        <212> DNA
        <213> Homo sapien

        <400> 540
```
tcgaggtacc tttccttgtt tcctagaatt cctaaggagg aacaacaaca aaatcggggt     60
ttgttcagca attgcaccac atctctaaaa attaaaacat tattcagtaa gtgaaggttt    120
ctgataaaca agtggatcaa actgaatatt tccaattaag aaagttcaca ataatacagt    180
agtgtattat taccaatagg aaggcctaat agtcgactat tatttttaa ggcaagaaaa      240
aagaaacaa gtgcaagcta tgccaagctt tggtgaatgc tgtccttggc attgcaagta     300
taaagtttgt ttaaaaagaa aagggaaaaa ttaaactaat gcttcaacaa ccacagaata    360
aggtttagga ctgcaaagaa agaggaaaaa agaaacatt attcctctcc aattatactg      420
ccaagcattc acaagtgagc tagggatcat aaggttaatt atacatttaa taaggtgtca    480
gggagataac tgctcatttc tttataaaaa ttaaaatgt                            519
```

        <210> 541
        <211> 431
        <212> DNA
        <213> Homo sapien

        <400> 541
```
acttgaggct tttttgtttt aattgagaaa agactttgca attttttttt aggatgagcc     60
tctcctagac ttgacctaga atattacata ttcctccagt aagtaatact gaagagcaaa    120
agagaggcag gattggggtc acagccgctt cttcagcatg gaccaagtgg gccttgggga    180
ttgcagcgtt ctcgaagtgg ctgtaggact cgaatttaca gaaagccaca gaggtgcaac    240
ttgaggctct gctagcaagc caccagtgag gctattgggt aaccaccttt ctatacagga    300
gattggaatc tactttgtca tttatccacc acagtgacaa aggaaaagtg gtgccgttat     360
gcaatccatt taactcataa acatattact ctgagtaact ggccagccat tcatcggatc    420
cttcattggg t                                                          431
```

        <210> 542
        <211> 502
        <212> DNA
        <213> Homo sapien

        <400> 542
```
acaaaaaagg aaataagaaa gtagtgacag cctatccata caaaaatcaa aaagacacaa     60
```

```
aggaagatag aatgagaaac agacctacaa gaatcattaa acaataaaat aacagtaatc      120
tttgtcttca gaaataaat attttaaaaa tagacttgcc aatcaataca catacattga       180
atagagggat tatataaaat tttatatacc aagatccaac ttgcctctct tcaagagtca      240
cttgagatct agtagtgaaa tcagcctgaa agtggcaagt ggaagaagac attttaggca      300
aacatcaacc aaacgagagc agaagagatc aaaattgtat tatacaaaat acatcgtaag      360
tcaacaactc tcttatttta taaaatatac tttatgtcaa aattcacaag agaaaaaagg      420
tcattaaaca ataataaaga tatcatttat tgaaaatgta tgacaaatat gtgcatacat      480
atatttatat gtttgtgtct gt                                              502
```

        <210> 543
        <211> 452
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(452)
        <223> n = A,T,C or G

        <400> 543
```
actacaaggg cagtaaaaca atgatacact ggaaaaaaaa aaatgcagca ataaacattt       60
gttaaaaaga ctgatagaat aaataaaact acaaaaaaaa aaaaatcata caaacccatt      120
ctgaaacccc aagaagtcct ggaatacaga aatgccctcc tccttcacta tttcacagga      180
agcactgcag gctatttgct taatattgtc ctgggattac attctaaaat tagtaactgg      240
ttacagctcg gttgtagtgc acaattaaaa tcacactaac ttcatctgaa gtgtcattct      300
acagttttat ttacacaacc agtgaagggc atgttctaga ataccagctt taatcctttt      360
caaacattaa tataagaagc caaattgtaa tgatacagca aantgaggcc actggtatta      420
atacaggtag caaaggtcca catccaggtg gt                                   452
```

        <210> 544
        <211> 472
        <212> DNA
        <213> Homo sapien

        <400> 544
```
caatcattta taatagaaac accttgacca caagcccttg attgaacatt ttataatatt       60
tcatctactt attaaaacaa ataatttccc ttgggttgga ggggaggtga tttcataaat      120
taattagaaa gccatcttta gcatattgct tatgtctgga tccatgtttc tgaggaaaaa      180
gacattctca ggtgatgtat tttttttcatg cattagtatg cattttaaa aaataatgca      240
tgtttcttta ataattaatt ttcatcttct ataagatgcc atgtgaagaa' gttgtggaaa      300
tgtagaataa aaagctaaag ctgccaaatt tctgttgaac tcttaaaaac agctcatgtt      360
tgtttgtcct ctcgggttgt ggcctagcct atttgcaatg taatgaagct gcagggttct      420
tgtatagcta aagcgttcaa tgcatttcac gtgctgtggt ggatgtgggt gc             472
```

        <210> 545
        <211> 281
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(281)
        <223> n = A,T,C or G

        <400> 545
```
acttaagcat ttccactttt ggaagaaaag tgtattagta ttttatattg catttcattt       60
aaaaggacag tttttttttt ttttgtaaat ccattcattg aaatggtttc taaactgtat      120
aatgtaattt ggagcctatt tagtaatatg aattaaatgt cctatgtagt gctacaattn      180
```

151

```
tygaattaga aagtgatcaa atgtmasaaa aaaattyaaa aattcagccc agaaaacaaa    240
ataggtatt aaattagttt aatgtaaaag gaattwataa g                        281
```

```
        <210> 546
        <211> 423
        <212> DNA
        <213> Homo sapien

        <400> 546
tcgaggtact gagacagaag attgtgtcta cataagcaca agttgtaaca tttcacaact    60
tctaaaagga atgtcaacaa ttacaacgat catgcatacc atggtcgata atcacatttt    120
agaagcattt tcaaccattt ctaaagaaat gcttataaca ttgttatata tagaactact    180
ttcaataaac tgcaaaacat tgatcgactt ttccagtatg agctacagtg tcaacacaaa    240
agggaggcat aaatgtttaa tttatgaaat cagaatggaa tatttactgt aaagaaaaat    300
taaaaagctt tcaaataaag gccattatcg aaccaacgtg aagagcacaa ctcgaacttt    360
tgagttcatt catctttaa agctgtcctc tcaataactt cagttctaag cactgaattc    420
agt                                                                 423
```

```
        <210> 547
        <211> 399
        <212> DNA
        <213> Homo sapien

        <400> 547
gaggtctttt agcaggtctc aaaagttttc ttctaatara ywtcttggtg ttctatcatt    60
cgtaggtgtt gaatttacca aacttttct atttcaatta ttacatttt actttgttca     120
agtaatattg tatcatatta aatgaacatt gcattgtgaa aataccctgc ttagtcatgg    180
tatgtaatca tccttatacc ttttgtatt ctttttttaa atatttctga gaatttctgt     240
gtctaaattt aaataggatg ttgttttgta atcatcttgt gattcttttg tctcctttgg    300
gtattattgg ccaatagatg aattaagaaa tgttacctct tctactgctt gaagttttg    360
tgagaaattg atgttttca ttaagtgttg atgaaatgt                           399
```

```
        <210> 548
        <211> 246
        <212> DNA
        <213> Homo sapien

        <400> 548
aaatgcatta taaatgtttt taattgtgtt ctgttttttg cagtctttaa gtgccatgcc    60
aattgttctt atattctata gaagttcgct caaaatactc aacaggggaa taggcagcgg    120
acagtcagaa tggttggaat tttggctttc taagaaaaac tttattttgc ataagcatgt    180
ggtcagatca ttttgtgcat atgcagcctg gattggatgt taagtaaatg cttgttcagt    240
gccggt                                                              246
```

```
        <210> 549
        <211> 413
        <212> DNA
        <213> Homo sapien

        <400> 549
acaaactggt attttatact gttccaatgc cagtaatcaa tttattttct tcattaaaat    60
aatatacaca gaatgtattg ttagttcgat tccttcaaat tttatacata tttactttct    120
gttaaagaga aaaggataaa atggtataaa aaagataaa gctattaatt aagcacgaga     180
gagaagataa atggatattt tccctgtgtg aggctaagac agaagcaaat ctcgttaaga    240
aaaatgccac ccacacaaca ggaaatttat ccaaaacaaa acaaaagcag ttatagaacc    300
ccttctctac catcagaagt aatttcacag caataaactt attggttaca acagacatac    360
ttgaacagtt aaggatggga agaaaggctt aagatatcac caaattaaac cgt          413
```

152

```
<210> 550
<211> 215
<212> DNA
<213> Homo sapien

<400> 550
acataaggtt caaagtttcc tttccttttt ttatttattt tatattttgc aatgtttttt      60
ttccataata tttaagtttt tcgatgttta gatatttttc ttcggtgaag cacaagtwtc     120
ttttcatggy ccctgakcaa ttttaaacag ttggaacacc ggtggcactg ataactgcty     180
tctgggcagc ctctttagct tggggggctb gtagg                                215


<210> 551
<211> 175
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(175)
<223> n = A,T,C or G

<400> 551
ggcggaggag cggtaactac cccggctgcg cacagctcgg cgctccttcc cgctccctca      60
cacaccggcc tcagcccgca ccggcagtas aagatggtga aagaaacaac ttactacgat     120
gttttggggg tyaaacccaa tgctactcat gaanaattga aaaaygctta tmmga          175


<210> 552
<211> 298
<212> DNA
<213> Homo sapien

<400> 552
acagtgtata ctatccccac caaaggaaaa aaacattaag agcaaaacaa ggggtggggg      60
gtgggaatat tgctaaagaa aattctaata agagttatct ataattatag cttttatta     120
ttatatcttc attcaatcat ttattcacaa ttagtctaat tgcattcttg atgaataact     180
gacttcagca aaggagtcaa tccactaagc aaagttcatt tattttcat gatgttcttc     240
tttcgatctt gagtctttac tctcctggat tcccaagaga actgcattag cctctagt      298


<210> 553
<211> 437
<212> DNA
<213> Homo sapien

<400> 553
yacaatggct taagcaaatc gctttagttt tttttctatt taagatttag gacagactac      60
tcgtctaaaa ttcactattt acagagaagg tcctaggaa caggataact tatttaggtt     120
tagctctcat aatacaatat ccataatggc tttagaagaa tgtaaataaa taacattggt     180
aaacagcgta tactgatatt ttctgacaaa ctcatttatc taacatcatg ctgagcaatc     240
aagaggattc ctctatatat tttaaatttt aatttattct atttcctgat tcacaaactc     300
ttgctccatg ttaaagcagt tatcaccaat agaacctatg agaaccagtg cccatggaaa     360
cctaacagct tgttttttta atccctatt aaaactcggt tgaacttgat atatgcatgg     420
ttgaaatatg cgtgggt                                                    437


<210> 554
<211> 575
<212> DNA
<213> Homo sapien
```

```
        <400> 554
ycgaggtact tttgacaaca tttatctgca tgtccagatc agcaatgagt cggcaattga      60
cttctacagg aagtttggct ttgagattat tgagacaaag aagaactact ataagaggat     120
agagcccgca gatgctcatg tgctgcagaa, aaacctcaaa gttccttctg gtcagaatgc     180
agatgtgcaa aagacagaca actgaacaaa ttacaaatga actttcttgc acttgcttgt     240
cgccaaataa aagagaggcc cattgattcc tcccccaccc caacactttt cttttaaagc     300
ttttctccct ccttgttctt gtttttcttt cttcctttcc ttttctctga gagttttaat     360
actttcaagg actttaaaaa aataatcatg tttgaattgt tttctcttat ttttgtgagg     420
tggtttgaag gaaggacaag gtagatctgt ttagttttgc agttgaagtt agatggtcct     480
aaacatttaa ttgtcaaata atttcaaatt taatgtcctg ctttcacatt gaagggcaga     540
gcctacaaaa cattgtatat ttcaaaagac aaaaa                                575


        <210> 555
        <211> 226
        <212> DNA
        <213> Homo sapien


        <400> 555
accgaaccat gaccacccct ggcaagagcc ttcatgcacc tagcaagtag tcacagcatg      60
catgtgccta gaattgttac gtggtcaaat tatattattg tgtattccca ccaacagtat     120
gagaaggtcc acttctccat acctccacaa ctctgggcat ctaaaacttt taaaatcctg     180
gaatcatagg caaaaaaaaa aaaattcacc catattttcc tctagt                    226


        <210> 556
        <211> 298
        <212> DNA
        <213> Homo sapien


        <400> 556
acttcatata agtggaatca tatagtattt gtccttttct gtctggctta tttcacatat      60
aatgtcttcc aggttcatca tattgtagca catgtcagaa tttcattcct ttttaaggct     120
gaataatatt ccattatgtg tataccacat tttgtttatc cattcatcca tcaatagaca     180
tttgggtatt tccaggacaa tatattctta atttaatccc acattttaag acttacaggt     240
aatttaaatt caattcaact tactgagtat ttactaaggg taactcacta tgggaagt       298


        <210> 557
        <211> 166
        <212> DNA
        <213> Homo sapien


        <400> 557
actaatggtc tacatccgat tcaaaaccac atagttcatt gatcacagat gcatggtatt      60
agtcacgaaa gtttcagaac acattgtgtt gattttgaaa ggtcatttgc atcttctatg     120
atttcaactt tatctccatt taacttgctt gtaaagtatg tatgat                    166


        <210> 558
        <211> 461
        <212> DNA
        <213> Homo sapien


        <220>
        <221> misc_feature
        <222> (1)...(461)
        <223> n = A,T,C or G


        <400> 558
actccctgtt ttgagaaact ttcttgaaga acaccatagc atgctggttg tagttggtgc      60
tcaccactcg gacgaggtaa ctcgttaatc cagggtaact cttaatgtta cccagcgtga     120
```

```
actcgccggg ctggcaacct ggaacaaaag tcctgatcca gtagtcacac ttcttttttcc      180
taaacaggac ggaggtgaca ttgtagctct tgtcttcttt cagctcatag atggtggcat      240
acatctttg cgggtctttg tcttctctga gaattgcatt ccctgccagg cctaccacat       300
accacttccc ctggaattgg ttgtcctgga agttctgctg cagagggacc ttgctcagag      360
gtggggctgg gatcaggtct gaggtggagt cctgggcctg ggcatgcaga gcccccaaca      420
gggctaggcc cagccacagg agacctangg gcatgatttc a                          461
```

```
        <210> 559
        <211> 193
        <212> DNA
        <213> Homo sapien


        <400> 559
accagacaga atcaggaaaa aaaaattgaa aataagcata acactataaa gaaaacttgg       60
aaaagtgaaa cacttctaaa taaaaaatat acacctggcc tggcacccat tacatatata     120
cataatacat gttataaaca tatatacagt aaatgttttg gtagcaatac agaccatgca     180
ttggtctttg tgt                                                        193
```

```
        <210> 560
        <211> 125
        <212> DNA
        <213> Homo sapien


        <400> 560
acacaattat tctcactctc cacagaaagg ctgcttaact tctcatctgg wggwggsaag       60
cactaaaatc ctgattttaa cagaatagta gkaaaaatgc ctcagtgatt taagttgaaa     120
gcagt                                                                 125
```

```
        <210> 561
        <211> 325
        <212> DNA
        <213> Homo sapien


        <400> 561
ccgaggtacc acggcctcag agtcacagct ttgtgacatt agggggcaat ctccagcttt       60
acgttttaga agacagtttg ttttttgatg tatattttta atatccccag attaaagaaa     120
actcagggca agtaacacac taaaagggcc tttacaattt ttttcttgct gttattttga     180
gatgcatctg ttgcaaaata tgtcaatgtt agaaatcaag ctccttcata tagggataga     240
tcatttgaaa tagatttctc tcaagaataa tccaattatt acttttagt gtttgcataa      300
attcactcca gaagtcatcc acagt                                           325
```

```
        <210> 562
        <211> 303
        <212> DNA
        <213> Homo sapien


        <400> 562
accagatgga aatgatattt gcttcactcc attttgaatt tctgcctgaa ttagctcttg       60
tttcagttct tcaatttctt tcttcagttt agcattttca actcgaagtt tcttctcttc     120
cctcaaagtt gcctgcaaaa ttgctttctc cttaagtaga gaaacttgct gcttaagata     180
ttcaatgatt tgatctgcct ctgcacccut ctgctccagt ctcttcagaa cagcatcatt     240
atttgccatt tttgccaaga gacggcagaa aatcatgaag cggaggacca cgggttccga     300
gac                                                                  303
```

```
        <210> 563
        <211> 279
        <212> DNA
        <213> Homo sapien
```

155

```
     <400> 563
tcgaggtaca cagtcattga agactctccg gaattcagat ttgaaaccat atattatctt          60
cattgcaccc ccttcacaag aaagacttcg ggcattattg gccaaagaag gcaagaatcc         120
aaagcctgaa gagttgagag aaatcattga gaagacaaga gagatggagc agaacaatgg         180
ccactacttt gatacggcaa ttgtgaattc cgatcttgat aaagcctatc aggaattgct         240
taggttaatt aacaaacttg atactgaacc tcagtgggt                                279

     <210> 564
     <211> 427
     <212> DNA
     <213> Homo sapien


     <400> 564
ccgaggtact gtgtagtggt atcagtgtta aaaatggaag atcattatga agaaacaatt          60
tgtcatttgg gtatatctgt ttctatagga caaggatttg tgtctaaata ttccttactt         120
gtatctcaga ggactatctg ttaaataatt gatcttaatg ccagcataag aaatcaaggg         180
aactatttct cagacatttc tttctctaaa ttaagtaggg tttcaggttc caagtttaca         240
ttgagagaac tatgttacct gggagagaat gtaaattttt ctaattccca aacaaaacca         300
ctaatttcta ggaaacattt attgtttata tgcagatcct agagacttct atttcagtgc         360
ggatcaacaa cttcaaaaat atacagcctc ctatttattt acaataatat ttacatacaa         420
atgaagt                                                                   427

     <210> 565
     <211> 214
     <212> DNA
     <213> Homo sapien


     <400> 565
tcgaggtact gggtcttttc cagccaggcc tgcaacggtg accttaatcc cagctcgcct          60
catgacatct acagggatga ccgtctccat ttcctctgct cctttagcca ggatgaccag         120
agctcttttg gaagccattt ttatgttata tgtttacaag ccccacacca ggctgaaaat         180
gaacgcacgc cagcacgcac gcgcgccgtc cggc                                     214

     <210> 566
     <211> 382
     <212> DNA
     <213> Homo sapien


     <400> 566
ccgaggtact tttagttttt tcacataact ctctaaaggc cttttcaaaa agtctctttc          60
actggcatca tctactagaa caatttcttc tatcatgtgt cttggtgagc gattaatgac         120
actatggaca gttcgcagaa gtgtgctcca agcctcattg tggaaaacaa tcaccacact         180
tgttgtagga agattatctg gatacacctt tgttttacac ccttctaacc taacatctgg         240
taaagatctg ttgagtgcaa tcatctcact tgccattaaa ttgaactgat tgattttaaa         300
catctctttc atcttttctt gatcctcttt aggaatgacg actggtttcc ccatttctcc         360
aggaccttca tgaggctttt gt                                                   382

     <210> 567
     <211> 271
     <212> DNA
     <213> Homo sapien


     <220>
     <221> misc_feature
     <222> (1)...(271)
     <223> n = A,T,C or G
```

```
<400> 567
cgaggtacaa ttacccacca ctggaggtga ctcagagagg accccccagag ggtgtctcca      60
tcttccctat ttattttcag cccttgaggg cttcattgta gatcaaagcc aaggcccccca     120
ggaaggtgac atactcctgg aagttcacct cctggtcctt gttccggncc aagtcttcca     180
tcagccttgc aatttcagca tcctgcagct tcgagccaat ggtgagctcc ttctggatca     240
gctccttcag ctccttcttg ctcagggtgt g                                    271
```

```
<210> 568
<211> 340
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(340)
<223> n = A,T,C or G
```

```
<400> 568
cgaggtgcag tgtatattcc tttgttgtga atccaaatct ttttcatagg taatgacaga      60
tgccttaatg tgaagcttat ttataatagc aataaaccta actggatttg gatgaagaag     120
tcttaatact gacatactgg attttttaatg cactggtttg ttatttggta ttctatctct     180
ttttccaggc ctccaggttg cacatttatt tattatgttc aatactttgg ttcttagttc     240
ttaaagaatc aagaagttgt gtaatctttt aaaaatatta tcttgcagat aaagaaaaaa     300
attaagagtg tgtttacaac tgtttnctct tttttacagt                           340
```

```
<210> 569
<211> 156
<212> DNA
<213> Homo sapien

<400> 569
gccaggtaaa ccaagacttg gtctcagtga agaaattcca gaggtcaccg gcaaagaagt      60
tcccttctca tcatcttcat ctcagctatt aaagatatat acagttgtac agtttgctct     120
gatgttggca ttttatgaag agacctttgc agatac                               156
```

```
<210> 570
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G
```

```
<400> 570
acagtactca gtatatctga gataaactct ataatgtttt ggataaaaat aacattccaa      60
tcactattgt atatatgtgc atgtattttt taaattaaag atgtctagtt gctttttata     120
agaccaagaa ggagaaaatc cgacaacctg gaaagaattt tggtttcact gcttgnatga     180
tggttcccat tcatacccta taaatctcta acaaga                               216
```

```
<210> 571
<211> 163
<212> DNA
<213> Homo sapien

<400> 571
```

```
tcgaggtttt gtaatccaag gttctgacta aaagcaaaaa tacacggcat agattgcaac    60
agcaaagaag tgtccaatta aaactagagg gttaggagac aatacagaaa gcagcccaac   120
aggacccgca acacattcgc caccaagttt tgaaataaag aaa                     163
```

```
        <210> 572
        <211> 156
        <212> DNA
        <213> Homo sapien

        <400> 572
gccaacgtgc agcggctgaa ggagtaccgc tccaaactca tcctcttccc caggaagccc    60
tcggccccca agaagggaga cagttctgct gaagaactga aactggccac ccagctgacc   120
ggaccggtca tgcccgtccg gaacgtctat tagaag                             156
```

```
        <210> 573
        <211> 414
        <212> DNA
        <213> Homo sapien

        <400> 573
ctggagccgc tgtggttgct gtccgcggag tggaagcgcg tgcttttgtt tgtgtccctg    60
gccatggcgc tgcagctctc ccgggagcag ggaatcaccc tgcgcgggag cgccgaaatc   120
gtggccgagt tcttctcatt cggcatcaac agcattttat atcagcgtgg catatatcca   180
tctgaaacct ttactcgagt gcagaaatac ggactcacct tgcttgtaac tactgatctt   240
gagctcataa aatacctaaa taatgtggtg gaacaattga agagattggtt atacaagtgt   300
tcagttcaga aactggttgt agttatctca aatattgaaa gtggtgaggt cctggaaaga   360
tggcagtttg atattgagtg tgacaagact gcaaaagatg acagtgcacc caga          414
```

```
        <210> 574
        <211> 414
        <212> DNA
        <213> Homo sapien

        <400> 574
ctggagccgc tgtggttgct gtccgcggag tggaagcgcg tgcttttgtt tgtgtccctg    60
gccatggcgc tgcagctctc ccgggagcag ggaatcaccc tgcgcgggag cgccgaaatc   120
gtggccgagt tcttctcatt cggcatcaac agcattttat atcagcgtgg catatatcca   180
tctgaaacct ttactcgagt gcagaaatac ggactcacct tgcttgtaac tactgatctt   240
gagctcataa aatacctaaa taatgtggtg gaacaattga agagattggtt atacaagtgt   300
tcagttcaga aactggttgt agttatctca aatattgaaa gtggtgaggt cctggaaaga   360
tggcagtttg atattgagtg tgacaagact gcaaaagatg acagtgcacc caga          414
```

```
        <210> 575
        <211> 417
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(417)
        <223> n = A,T,C or G

        <400> 575
tggtatgggt catataggtt cggtacaaca tgaagccatg gtcctgggta tggaagaatg    60
agtacttcag acaaacagaa ataaaagagg cactgtgac tatagccaag gaacttttgc    120
gtatagctgt taagggaggt tgtcatctcc accagatgtg ggtttatgcc ttacctgctt   180
gacagcctca aaggtcattg gcaagattga atgaatgggc ccacgggggc aaagcaagtc   240
taggaaagcc agtaaatgcc caacctatta gaataaggga gaagaattag aatatcaggg   300
```

```
aagtttctgg atagaggaca agaaagaata ggctatttag aaaaaaaaag gtgtggtccc        360
attattttca ggcttcaccc tanatgacac atgagcaaaa gcccacttcg ccatcat           417
```

```
        <210> 576
        <211> 245
        <212> DNA
        <213> Homo sapien

        <400> 576
ggaagggggg accctgccaa agatgaggct ccagctgccc tggggggagg gtggtggcca         60
ttactagagg gggcctgggt cctctcccca ggggctgcca gcatccaggc caggaagcct        120
ggagccaaga accttctggc tctgagggag caagagctgg caggcggcag ggctggcaca        180
gacagacgga agcagaaagg acagtttggc tgctgtgtct gctgcgcacg ccccctcccc        240
ggaca                                                                    245
```

```
        <210> 577
        <211> 418
        <212> DNA
        <213> Homo sapien

        <400> 577
gaaaacccctt taatgttggg ctttctttaa ataaaacaga aaggttgcag cttttcccatg      60
gtggctgtaa ggcaagaaca gcagtgaggg cgggcgtgtt ctatcgggca gtgctgcagc       120
ccttgactct ggctcaaggt gggcttcctg gaggcagcgg caaggaggca gttctggatg       180
tgcaggcaca gatgtagggg aacaggcaag cgggcacagg ccctgagct gacaagcagt        240
gacccctgca cccagctaga tggggcaccc cctctctggg agctgagggc atcagctgga       300
gcctcaggct gggaccagcc ccaactttgc cttggtgact ctgggccatt ccaggcctca       360
gtttccccac tgtaaggtga ggcattaggc aggagggggt ggccccagcc agtgtcct         418
```

```
        <210> 578
        <211> 363
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(363)
        <223> n = A,T,C or G

        <400> 578
aaagcccaga aggcacttta ttggaggtct ctgcctccat tcacaggaga aaggagctgg        60
gagccccatc ctagggtccc agcatcagcc cactggaggg cctggaacag tccagcactc       120
tgtgggagag gagtggggag gggaatgttt tanaaaaaat agatctctat gtacatctga       180
catatttata tagcacataa attagggagt gctctgaccc ctgcccgtgg agcccaagca       240
ctgagcaggg aggtgaacgc cagtccagaa agaaggtgct ggagccctg ctctgttctc        300
tccatcacgg ggctcccccta gggcctcccc aggcctcctt ggctcagtcc aggtttgtct      360
gca                                                                      363
```

```
        <210> 579
        <211> 403
        <212> DNA
        <213> Homo sapien

        <400> 579
ggaataatca gctcttctgg cccacaagta ggaatgatca atgagaactt aacttagtcc        60
tttatttggg gatttttttca tcaaacaaaa atttcttgaa ttggggagac cacttccctg      120
taactccagt attgcccccct ctcactttag catatattaa ttagcaggtt gggctagaga      180
aatcagctgc tatgcgggtt gattattatt attatttcta atccttttcc ttatttgcct       240
```

```
tctactcccc ttaatctaat ctaaaagctc tgttccatgc aactggagtt ccttatccct    300
ctcttcccct tcccttatat attgaggcta tggggtagga gaaaagtgca caacccacca    360
cccccttttac tcgtgcatta aaatttctta tttacccttt tcc                     403
```

        <210> 580
        <211> 403
        <212> DNA
        <213> Homo sapien

        <400> 580
```
ggaataatca gctcttctgg cccacaagta ggaatgatca atgagaactt aacttagtcc    60
tttatttggg gattttttca tcaaacaaaa atttcttgaa ttggggagac cacttccctg    120
taactccagt attgccccct ctcactttag catatattaa ttagcaggtt gggctagaga    180
aatcagctgc tatgcgggtt gattattatt attatttcta atccttttcc ttatttgcct    240
tctactcccc ttaatctaat ctaaaagctc tgttccatgc aactggagtt ccttatccct    300
ctcttcccct tcccttatat attgaggcta tggggtagga gaaaagtgca caacccacca    360
cccccttttac tcgtgcatta aaatttctta tttacccttt tcc                     403
```

        <210> 581
        <211> 432
        <212> DNA
        <213> Homo sapien

        <400> 581
```
acctgataaa agttaataat ctcttgttag gaaagctgtc cattaataag gccagtcttc    60
agcaaaacta aaaccatttt gttcgtttag ctttcctagt ctgacaacgc aatactgttg    120
aaccacagtc aaatataatg acaacattgg atggatagat cagtaccatt ggttacagct    180
gttaaacagg ttcgttcttg gcgccacata aaaacaagcc aataacatcg aataaatcat    240
ggctttttttt ttctttatca caattcactt aagtgatgtt aattatggtc cttgtcaaac    300
acgtttggta aaggctattt acagtgtaca tggctgagca tgcactattt atagttacaa    360
agatacctgc cagtttatta caatagaata cacagtgctg aaatggtgaa ctctcccatc    420
ttaatatata tt                                                        432
```

        <210> 582
        <211> 215
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(215)
        <223> n = A,T,C or G

        <400> 582
```
gtttatttca gctttactta aaattttagt ttcaaatgaa atgaaatgtg acactgaagc    60
ataagaacac aactgaagac tgcaaacaac ctaattcatt ttcccaggtt gcttaagcct    120
ncaagcacca ntcaaatatc gnantcnatt aaaagnaggn ctttcccatt tgtngccngc    180
ttcngaatgg aacntattta aaaccntcaa tttct                               215
```

        <210> 583
        <211> 426
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(426)
        <223> n = A,T,C or G

```
        <400>  583
tgggcgcctg  tgggactggg  tgcctctggc  gtgcagaagc  ttctctcttg  gtgtgcctag      60
attgatcggt  ataaggctca  ctctcccgcc  ccccaaagtg  gttgatcgtt  ggaacgagaa     120
aagggccatg  ttcggagtgt  atgacaacat  cgggatcctg  ggaaactttg  aaaagcaccc     180
caaagaactg  atcagggggc  ccatatggct  tcgaggttgg  aaagggaatg  aattgcaacg     240
ttgtatccga  aagaggaaaa  tggttggaag  tagaatgttc  gctgatgacc  tgcacaacct     300
taataaacgc  atccgctatc  tctacaaaca  ctttaaccga  catgggaagt  ttcgatagaa     360
gagaaagctg  agaacttcgg  aaaaggctca  tctgtcaccc  tggagaangg  aaactgtact     420
tttccc                                                                     426


        <210>  584
        <211>  431
        <212>  DNA
        <213>  Homo sapien


        <400>  584
cactgttgct  gttttcagat  acaccagaag  agggcatcag  atctcattat  gggtggttgt      60
gagccaccat  gtggttgctg  ggatttgaac  tcaggacctt  cggaagaaca  gtcagtgctc     120
ttaaccactg  agccatctct  ccagcccaga  tttccttttg  atggtgaagc  attttaattt     180
taccattttg  ctttgaaagg  gcactgctct  atgttctggc  actatcggta  ttctggactc     240
ctcttcgtaa  aacatttctt  tataacaaaa  ggtgcactta  cttttatttc  ggtgtgtgtt     300
ttgcctgcat  gaacgacttg  acatctcaag  cctacctggt  gtctggagag  gcccgaacag     360
gatgtcagat  gccctagaac  tagagatacc  gaccgttgtg  cgctaccatc  tgggtgctgg     420
gaattgaact  a                                                              431


        <210>  585
        <211>  412
        <212>  DNA
        <213>  Homo sapien


        <400>  585
aagagagaaa  gagaacattt  ttataccaag  gagggattga  ctttcagaaa  agagtagact      60
tctctctcct  cccttcctcc  aaaaaaagaa  gttggaaacc  ttctgttttt  gtgtgtgtgt     120
ttttggttgt  tctttgtttg  tttttgtttt  tgagatggag  tctcactctg  tcacccacgc     180
tactgcagtc  agcctgggtg  acagagtaag  attctgtctc  aaaagaaaaa  aaaagacaga     240
aaagaaatgg  actctgatgg  aaaagatgtg  tacaaggctg  attatactaa  gcagagggat     300
atttaaataa  atgctaagaa  gagaggcagg  tgaagctcca  ggggagccat  ccttcccaaa     360
tgttcactta  aattttcagc  ggtttgggta  tgccagatgg  tgaacctagg  ta             412


        <210>  586
        <211>  431
        <212>  DNA
        <213>  Homo sapien


        <400>  586
aagaaaaggg  agccaagaag  aaagtggttg  atccattttc  taagaaagat  tggtatgatg      60
tgaaagcacc  tgctatgttc  aatataagaa  atattggaaa  gacgctcgtc  accaggaccc     120
aaggaaccaa  aattgcatct  gatggtctca  agggtcgtgt  gtttgaagtg  agtcttgctg     180
atttgcagaa  tgatgaagtt  gcatttagaa  aattcaagct  gattactgaa  gatgttcagg     240
gtaaaaactg  cctgactaac  ttccatggca  tggatcttac  ccgtgacaaa  atgtgttcca     300
tggtcaaaaa  atggcagaca  atgattgaag  ctcacgttga  tgtcaagact  accgatggtt     360
acttgcttcg  tctgttctgt  gttggtttta  ctaaaaaacg  caacaatcag  atacggaaga     420
cctcttatgc  t                                                              431


        <210>  587
        <211>  132
        <212>  DNA
```

```
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(132)
            <223> n = A,T,C or G

            <400> 587
aactttccca tggtcaaagg aaaaacaagc aggagttgag tggctggggt ggggtgcagg      60
caatggagag agggcataag ggtgtagaan ctgaagggg ctagaagctt actcctgagc     120
ttcttacntc cg                                                          132


            <210> 588
            <211> 425
            <212> DNA
            <213> Homo sapien

            <220>
            <221> misc_feature
            <222> (1)...(425)
            <223> n = A,T,C or G

            <400> 588
gggcttcttc aangaacctc agctgaaacc tntgggggat tactganttg atntgnccac      60
cagaacaggn gngctcgctt ttgttctgaa atcaaatcct cnaaagaccg ggagaaggg     120
tcacccannc gtggatcgtt ggcattgtgg gaaaaggaa accgnaacgg cccggatcat     180
tgacaagccn cgaagttatt gaagtcctgc ctcgtggggc cacagctgct tgttcttgct     240
cctgacagtt caaatgcctc ctttgagcct agctcgtgag atgaaagaac agaagttgtt     300
tggaccttag agccattatc cacaatcacg gatggttctc aagagttgat tgtaagaaat     360
ttccaaagaa ggctgcctgc atagtggttc cggctgccct ttctaggtga ttggaatcan     420
cccat                                                                  425


            <210> 589
            <211> 425
            <212> DNA
            <213> Homo sapien

            <400> 589
caacagttat tttattagga tgtcagccct gggtccagag tgagagatag ggacagggga      60
cagcccagcg aggctgggtc gggggtcact ccaggatgtt ccaaccacag gggcagcatc     120
tcctccactc cacatgctgg ccaagggcac agagctgccg tatcgcctgc caaggggtg     180
gctcaatgct gctgccctgg tcctgtatgg gcccggggtg ccgagaacag acagcaagcc     240
tcaggcgccg gtcctttgag ctttcttgat ttcctcagag agcgcctcct tcagctctgc     300
gtaggcctgg tccaggctgt cgttaatgat gaccacatca aacaggccgg gctccttgct     360
gctctccatg tcggcctggg cagcagccag ccgcttcacc aggctctcct cggtttcagt     420
gttgc                                                                  425


            <210> 590
            <211> 425
            <212> DNA
            <213> Homo sapien

            <400> 590
acaagtatac atataatcta gataagggct gtaatgtttc ctaatattaa ttactgtact      60
taaaaattta caggacatga acataaataa agctgtttaa aactggcaaa cgtagtaata     120
gtctgtcatt cagtacaagg tatatttatg ttatttccaa agccatcacc ctaaaatcct     180
aagttgccac tcttaaaacc taaaaataat gtcgaaaact aaagtcataa atacatgtat     240
acatacattt gcatatttac acttatgcag aaatcatcaa tatactagag cccagcttta     300
```

162

```
acactgtcct  tcagtttcac  acagaaggac  ccctaataac  tgtaaatata  taaatatgtc       360
aggttaaagg  gaaaaggtgt  tcagggcact  tcttgtcctc  tctgtcccat  aacctacctc       420
caccc                                                                        425


      <210> 591
      <211> 425
      <212> DNA
      <213> Homo sapien


      <400> 591
aagtatgtat  gtacaagact  caagtaaata  gaaaggcagc  tttcaatcac  aaatcagttt        60
ttcagatttt  actgtggaag  catatttaat  gcacacattt  gaatgttaca  cataaataat       120
tttaacgatg  gagtccaagt  tctggatttt  acattagatc  tgcatatata  agacacttgt       180
ggtcaaattt  caagattggt  aaagccagtt  tcaagctgct  tatattttga  gtacaggttt       240
cactattaca  aatatatgat  gttaaactaa  caaactcatg  accttcaaag  atgtcttcgt       300
cccacgcaca  cacatttgta  atttgtgtcc  atttgctatt  tcccttcttc  tataatcttc       360
aaattatata  gttatgcatt  gagttcccta  tgcatctcac  ccatctcctt  tatctcagcc       420
ttctc                                                                        425


      <210> 592
      <211> 299
      <212> DNA
      <213> Homo sapien


      <400> 592
agtgaaaatg  ggttggtttt  tgtcttcgac  gctcagggtc  tgggcgcctc  gcatttgcag        60
tctgttgtga  cagacacggg  gagctccgcg  tgccagcctg  tggctgccct  gctgtggggg       120
tcctgggggcc  ggcgaggccc  cttcagtctt  gttctggggg  gacggcccac  tccggggagg      180
gggtgtgctg  tgctgagcgc  tgtatccctg  aatatagttt  attttttcta  catttgaatt       240
ctgttgtaga  tttatgtaaa  aatacattct  ttttgaaaat  aaaaattttc  atgtcttct        299


      <210> 593
      <211> 425
      <212> DNA
      <213> Homo sapien


      <400> 593
ttttttttc  ttttcccag  gaggcggcga  cggcggcggc  ggggggagag  gaagagaaag         60
aagcgtctcc  agctgaagcc  aatgcagccc  tccggctctc  cgcgaagaag  ttccctgccc       120
cgatgagccc  ccgccgtgcg  tccccgacta  tccccaggcg  ggcgtggggc  accgggccca       180
gcgccgacga  tcgctgccgt  tttgcccttg  ggagtaggat  gtggtgaaag  gatggggctt       240
ctcccttacg  gggctcacaa  tggccagaaa  agattccgtg  aagtgtctgc  gctgcctgct       300
ctacgccctc  aatctgctct  tttggaatca  tcacattcca  cttctaaaag  gagctttaaa       360
gatggcctgg  ttgaacgtcc  ttcctttgtg  agtgaggaaa  ttaagtgcag  attaagtgac       420
ttgcc                                                                        425


      <210> 594
      <211> 425
      <212> DNA
      <213> Homo sapien


      <400> 594
gtcactagct  ggctaaggct  taaagcagag  acgtgtgact  gggtctctcg  ggagggcctc        60
tggttcttcc  cgggctcagg  cttgctgggg  gctggggggcc  agggctctgg  cgacctagag      120
gtgtggacgg  cacagctgca  ggaggccttc  tcttaaccct  ccgagagtgg  gactgggaga      180
tttcctctga  agtcccaaag  aggccctgtg  cccagggggac  ctcctcctcg  gcctcccagg      240
tgggtggtgc  aagctggttc  ttggccatgc  tccaggctcg  ggtgggcaca  ggcgtccact       300
ccagtgtgct  gcgtgcttgt  gagactgcct  gttctgggac  cagccccctgg  gctcttccac       360
```

```
caagatttgg tgagggtccc cctctgcctc tcacagaagc ccctggccct ggactgtcct     420
ggggg                                                                425
```

```
<210> 595
<211> 162
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(162)
<223> n = A,T,C or G

<400> 595
```
```
ctttacatta ttttttttcc aaaaagacta gtatttatac aangggcaat agaaacaaaa     60
acaaaaaccc ttccgactgc cacctggaag gggctggctg gnctgctccc tctcccacct    120
ggaacngggg ggggcactgg gcaggaggga atgnggangn gg                        162
```

```
<210> 596
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 596
```
```
aaggtgactc aacaccntct tcctcaagga cttcttggtg atactctctt gtcttttcca     60
gttaccctct tcctcctttg tcctctgtgc ttgggctcac aacttnatgg nctgnacttn    120
ataaaanaac natggcaact ttgncctgan tgncnccctn cccaanctga nctggntgga    180
anaagaaact tggaaactat ntnanccatg gntttgggan nctncccccct tnccatgnc     240
tnctaataaa accatgcant gcctttggag agaagagacc ccc                      283
```

```
<210> 597
<211> 426
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(426)
<223> n = A,T,C or G

<400> 597
```
```
gaaatacaaa tgtggattct catcactgaa aaatctttga ngntgngttt attcctttca     60
tcattttta aatatttttt ttactgccta tgggctgtga tgtatataga agttgtacat    120
taaacatacc ctcatttttt tcttttcttt tttttttttt ttttagccc aaagtttttag    180
tttcttttc atgatgnggn acctccnaag ngatggnaga tttaaataat ttttattttt    240
tattttatat atttnttcat tagggccttt tctcccnaaa acgaaanaaa aantccnaaa    300
aacnaaaccc aaaaaaanag agggtantgt ccnagtttct gtatgtataa agtcntncnc    360
gatttcagga gagcnctgnn cccaatttgc tccntgaatc aaggngngna aatggttttt    420
ttggcg                                                               426
```

```
<210> 598
<211> 412
<212> DNA
```

```
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(412)
        <223> n = A,T,C or G

        <400> 598
tttttttttt tttttttttg ccacctagag atgataattt attgttttac catgactcag      60
aagagaaaca acataaagag aatatttcaa atccccacaa tttccttctc aacctcacta     120
ctcttaacat ttctttatca gacgccactg gcttcctaaa atggaccctg gactatgtat     180
ggggaccaca ttcattatgc tgcctttcct cttatgatta aaactttagc cctcattcga     240
nggttccaat ggtactttta gnggaggagt ccctagcttt taaaaaaacc actttccctn     300
taaaatccnt tntttatnga aaaaaancnt ttttaaaaat gttaaggagg attttaaatg     360
accatattca attaaaaaaa aaatnccttn tggaacatnt tngcagaaac ct             412

        <210> 599
        <211> 415
        <212> DNA
        <213> Homo sapien

        <400> 599
ccaagatgac aaagaaaaga aggaacaatg gtcgtgccaa aaagggccgc ggccacgtgc      60
agcctattcg ctgcactaac tgtgcccgat gcgtgcccaa ggacaaggcc attaagaaat     120
tcgtcattcg aaacatagtg gaggccgcag cagtcaggga catttctgaa gcgagcgtct     180
tcgatgccta tgtgcttccc aagctgtatg tgaagctaca ttactgtgtg agttgtgcaa     240
ttcacagcaa agtagtcagg aatcgatctc gtgaagcccg caaggaccga acaccccccac     300
cccgatttag acctgcgggt gctgccccac gtcccccacc aaagcccatg taaggagctg     360
agttcttaaa gactgaagac aggctattct ctggagaaaa ataaaatgga aattg          415

        <210> 600
        <211> 208
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(208)
        <223> n = A,T,C or G

        <400> 600
aaaccgcctt tttttttttt tttttttaa tatgcagttt gtaanaacaa aactggatgg       60
catcanaatt gtctggaagt tttgtcttgg gcagtatggg ctgggccaaa tgaaatgatt      120
tttataattc taaacaggtt accaaatgaa atgtcatggc tttactttgg caattaaagg      180
ggggaatttt tttaaaaaaa aaaaaaaa                                          208

        <210> 601
        <211> 165
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(165)
        <223> n = A,T,C or G

        <400> 601
tgcaggtcga cactagtgna tccaaagaaa gtaacctaaa cttgacctgc ttaatacatt       60
```

```
ctagggcaga gaacccagga tgggacacta aaaaaatgtg tttatttcat tatctgcttg      120
gatttatttg tgtttttgta acacaaaaaa taaatgtttt gatat                     165
```

```
        <210> 602
        <211> 416
        <212> DNA
        <213> Homo sapien

        <400> 602
aaaacggttt tgccgagttg ggacgtccac tgctgtcaag tcaaccagag atttgaactg       60
tgcattggtg tgatccctga ggaaagtcag cactggatg acgccatcag gatggataca      120
gacctctaac tcattgaagc aggacacctg aacttgttgg acatacttgg gcaagatttc      180
agccacatac tctccaaaag ctgagagctg cttgtgggcc acatcattcc gtggtctgac      240
agtggggcgc gtgtcggccc cggcgctctc ccgcctcacc ggcagcaaca gaacggaggg      300
tcgcccagtc cccctggtca gcgccgaggc ccccaagatc ccgcgccacc acagcctggc      360
taccgccgcc gcgagtactt ctagagcggc cgcgggccca tcgattttcc acccgg          416
```

```
        <210> 603
        <211> 416
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(416)
        <223> n = A,T,C or G

        <400> 603
catgagcata aaaaaaaaac ccaaacctgt nccataccc tcccactcat gcaaacagct        60
cttaaaatga agaattcttt caaaatttta cgttttttnc attcttggct caattctttt      120
gctttcctca tcatcagaat tcaaactttg ggcaaacatg ggttttgggc tgantctttg      180
gaatatgctg gaaaaacccc aatatgggct gcttctgctt gtttggcatg acgcaaaatg      240
gnttcccang atactgcatc gtcttgccaa gaatgttcca ttagaaaaag gcccgggtcc      300
tcgccacact ggctggcctc tgctgggtgc ntctagagta tatcggctgc acctcagtgc      360
atctgtccat aatttttttg aaaaaaaaaa ctcaatctta acgcgggcat attcnc          416
```

```
        <210> 604
        <211> 414
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(414)
        <223> n = A,T,C or G

        <400> 604
aaaatttatg agctttatta aagcggttta tcacaaagat ggaaacgtac aaatgagaag       60
catgcaacca tcatcttcca cagtcaagtc aaactgctat ttctctctct ctcctgtttc      120
atagagctgg aaactgcagg tgttataccc aacctattca tcctcaacac tgtagtcacg      180
ccccggaaac tactcagggc accaaacatc caaaacataa actattatta tacaaagaaa      240
gtgcaaagtt aaaaaagaaa acatggagac ccctcccccc cataccctca nctaaaggct      300
aacaatggca cttgggctct tgcttaatct agattgtctt caaaaagtct ctaaaatgng      360
atactgngng nggnggggg ngngaanggt ccaaaagctn cttagtgttt gaaa             414
```

```
        <210> 605
        <211> 417
        <212> DNA
```

```
<213> Homo sapien

<400> 605
tcctctttca caatcactca acaaacaggt cacacatccc ctaggtccac gaactcatct      60
tctcgtttgg ccaaatcgtc ttcatctccc aaagctttcc agccactggt gggtaagacg     120
ggcttagagg aatgtcgctg gagcagagcg aaaggaaaca aagacgagag gcgggcagag     180
ttcctcagca ggcagggggc ctcagcctgg ggggcctgct ggctgtggtg tctctcgtcg     240
atcttctctt gtaaactctg gacttcctcc atcatttcca agagtttgct cagagtggcc     300
acttggccac cacctaggat ttgggcttct ggaatccaac gtaggtagcg ctgggcccag     360
actttgattt cgggcccctc gatatgcggt aacaacaaac catggtagtc agtggac        417

<210> 606
<211> 413
<212> DNA
<213> Homo sapien

<400> 606
ctgaattctt taatttaaaa aaatcatacc taggaggtgt gctataggaa ttcagataca      60
ataagttgca tataaaaccc gacctcattg ctcattgtgg taaagcaagg atgatgagaa     120
aatgcacctc aggagcaaaa acacgcttta cgggcactcc gggacccaag tcccgagaca     180
tttccacgtg accttctgga aagacacacc gcccacctga ctgcacgacg ggactggtcc     240
agcctcccgg ctcctcagga aggagatgag tttcctacaa agtgagtggc cacagctcca     300
ggacagggcg tccacatgtc gttgtgggtc tggctggatt ttgaggtgcc gaggaactgg     360
tcggtgtcct gatcgtattg tacgtggtgc tctcgatctc ccaactgcca taa           413

<210> 607
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 607
attttcatta aaactgtcag aatttgctta ctataattat gatacagtcc aaagaatgca      60
gtcacttttt atcatgttaa ctaattgttc tcttttgaag atctatggtt gactaattaa     120
acaataattc aagtagagtg tcccagaaaa aaaccacttg ggctccctgt ttggagtctg     180
gctggctctg agcattgcca atggccccta ctcacctgac tttgtatcct ctccttttag     240
aggctttgca ttctgcaccc agcttcacta acagtgggct gaaaacatcc ttgggttgag     300
tgtttcattt gggagttatt tggccagggc cttttgaaca gtaagtgtcc ccatgaagtg     360
ctagataata tatggngtaa agangtcagc tttttttttt tttttaactc taac          414

<210> 608
<211> 415
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(415)
<223> n = A,T,C or G

<400> 608
gcagtggtct gatcttaagg gnctatatat ttgcacctcc tcattcaaca cagggctgga      60
ggttctacaa caggaaatca ggcctacagc atcctgtgta tcttgcagtt gggattttta     120
aacatactat aaagtctgtg ttggtatagt acccttcata aggaaaaaat gaagtaatgc     180
```

```
ctataagtag caggcctttg tacctcagtg tgaagagaaa tcaagagatg ctaaaagctt    240
tacaatggaa gtggcctcat ggatgaatcc ggggtatgag cccagganaa cgtgctgctt    300
tttggtnacn tatcccttt tntcttaaga aagcanggtn ctntcttatt annaaatatg    360
ttaaaaaatg gnaagcaaac nacaggtgcc tttanaaatt accaattntt aactt          415


        <210> 609
        <211> 420
        <212> DNA
        <213> Homo sapien

        <400> 609
ggttttaaaa ttatttcttg aatctctcca tacacaggca aaaataagtg tgttacttaa     60
catactggaa attgcctaac ttaatcattg cctaaagaag agaaaattat ccccaaaacg    120
tgcttaacca ggaggccaat gcatttgccg acctccaaga acatggagat gaacgtgata    180
gacagactgt ccaccatctg aaccttcatt caccaccatt cgataaccct tattcaggcc    240
cagatcagca gcacatttct tgccaacaat cattaagtgt ccaagaagac tttcatcatc    300
atcttctgcc acagaaatct gggatatatg tttcttgggt atcaccagaa aatgtgttgg    360
tgcttgaggg gaaatgtcat ggaaagcaag gcaccggtca tccttaaaaa tgattttggc    420


        <210> 610
        <211> 158
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(158)
        <223> n = A,T,C or G

        <400> 610
caactttaaa aaaaagggg cggtnaaana nccaaanata aaaaggtccc tttggtggat     60
aaaggnccct ttccgggacc ggnccnggac ccacctttgg gcccaaaggg ggatttaccg    120
ggtaaaccaa gcctttaaag cgttgggggt taaatttc                            158


        <210> 611
        <211> 159
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(159)
        <223> n = A,T,C or G

        <400> 611
tcgacactag tggatccaaa ggaagatggc ggacattcag actgagcgtg cctaccaaaa     60
gcagccgacc atctttcaaa acaagaagag ggtcctgctg ggagaaactg gcaaggagaa    120
gctcccgcgg tnctacaaga acatcgntct gngnttcaa                           159


        <210> 612
        <211> 419
        <212> DNA
        <213> Homo sapien

        <400> 612
gcattttta ttaagacatt tggggcccga gtttcctctc ctcctcccct ccatcctgtg     60
ctctctaaat tcagcttttg gaaacctaag tgtgcccacc ttccccagca ggtagccaga    120
gcctccgggg tccctcttcc ttccttcttt ctccccagat actgcaagag acacccaagt    180
```

168

```
ctgctgtcag cagagggtga agcgtctggc actgatgttc atgcgcgtga gtcccagatg      240
ccgcagcggt ggggccagag gcaagccagt cccagactct aactccatct ccagctcagc      300
ctcatccaga agctcctggt gcaggtgaca gacttggtcc actttcagtc tgtgcagccg      360
ggcccgcagc ctgagcagct gccctgccag ctgccggtcc tgagcccgca tctcctgca      419
```

        <210> 613
        <211> 419
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(419)
        <223> n = A,T,C or G

        <400> 613
```
ccccatactg aggcatataa agtttgcaaa accaaggggc ctgtcttccc aaggtcttac       60
tataaaatct gggttaggct aaaacttatt atgtagacca gagaggcgtt gattttaaac      120
caatcatcct gtctcatctt cattatttct ggctttatga gcagaatgtc ctgctacctt      180
tggcttctta taaagatctt taatggagta ttttaaacat tggaaaatcc atgagtttga      240
gcttatttgg agaatgctgc taagaatggg attgactgac ataacttact agcctctttc      300
ctgcttgagg tacagcagtt ttcaatccca atgtgtaaag tgcttagaag ttatcactcc      360
ccaccttaga gcaaaaacct tcagagaact tcagncactc caccaggcaa atagcacct      419
```

        <210> 614
        <211> 123
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(123)
        <223> n = A,T,C or G

        <400> 614
```
gnggtatgga ctagaaaact tggaatgact catgaanaaa ccttggaatg acacatgaag       60
catgataggg aaantnattc tgaggcnnga ngcttnactg aattntttcc anccagnggt      120
ntt                                                                     123
```

        <210> 615
        <211> 362
        <212> DNA
        <213> Homo sapien

        <400> 615
```
gaccttgagg tttcatcggg tgattgccct tgatttctta ggctttggct tcagtgacaa       60
accgagacca catcactatt ccatatttga gcaggccagc atcgtggaag cgcttttgcg      120
gcatctgggg ctccagaacc gcaggatcaa ccttctttct catgactatg gagatattgt      180
tgctcaggag cttctctaca ggtacaagca gaatcgatct ggtcggctta ccataaagag      240
tctctgtctg tcaaatggag gtatctttcc tgagactcac cgtccactcc ttctccaaaa      300
gctactcaaa gatggaggtg tgctgtcacc catcctcaca cgactgatga acttctttgt      360
at                                                                      362
```

        <210> 616
        <211> 210
        <212> DNA
        <213> Homo sapien

169

```
<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 616
tgatgccacc ccgtcacccc tcccctcctg agcagggatc caagaatgtg ccaagagtcc    60
cgccagcctc agccaggtgg gcctgtatat agggtccatg tgcaataggg agggacgtct   120
tctatttttt gctgcccccct ccccgcccac tgtctngggg caggggggaga aggtattttc   180
nagataaagc acangcacca caaataaaag                                    210


<210> 617
<211> 511
<212> DNA
<213> Homo sapien

<400> 617
acgagctttc gtggctcact cccttttcctc tgctgccgct cggtcacgct tgtgcccgaa    60
ggaggaaaca gtgacagacc tggagactgc agttctctat ccttcacaca gctctttcac   120
catgcctgga tcacttcctt tgaatgcaga agcttgctgg ccaaaagatg tgggaattgt   180
tgcccttgag atctattttc cttctcaata tgttgatcaa gcagagttgg aaaaatatga   240
tggtgtagat gctggaaagt ataccattgg cttgggccag gccaagatgg gcttctgcac   300
agatagagaa gatattaact ctctttgcat gactgtggtt cagaatctta tggagagaaa   360
taacctttcc tatgattgca ttgggcggct ggaagttgga acagagacaa tcatcgacaa   420
atcaaagtct gtgaagacta atttgatgca gctgtttgaa gagtctggga atacagatat   480
agaaggaatc gacacaacta atgcatgcta t                                  511


<210> 618
<211> 511
<212> DNA
<213> Homo sapien

<400> 618
acgaggccac agaggcggcg gagagatggc cttcagcggt tcccaggctc cctacctgag    60
tccagctgtc cccttttctg ggactattca aggaggtctc caggacggac ttcagatcac   120
tgtcaatggg accgttctca gctccagtgg aaccaggttt gctgtgaact ttcagactgg   180
cttcagtgga aatgacattg ccttccactt caaccctcgg tttgaagatg gagggtacgt   240
ggtgtgcaac acgaggcaga acggaagctg ggggcccgag gagaggaaga cacacatgcc   300
tttccagaag gggatgccct ttgacctctg cttcctggtg cagagctcag atttcaaggt   360
gatggtgaac gggatcctct tcgtgcagta cttccaccgc gtgcccttcc accgtgtgga   420
caccatctcc gtcaatggct ctgtgcagct gtcctacatc agcttccagc ctcccggcgt   480
gtggcctgcc aacccggctc ccattaccca g                                  511


<210> 619
<211> 413
<212> DNA
<213> Homo sapien

<400> 619
gaattcggca cgagctggac aggagaagag cctggctgct gaaggcaggg ctgacacgac    60
cacgggcagc attgctggag ccccagagga tgaaagatcg cagagcacag cccccccaggc   120
accagagtgc ttcgaccctg ccggaccggc tgggctcgtg aggccgacat ctggcctttc   180
ccagggccca ggaaaggaaa ccttggaaag tgctctaatc gctctagact ctgaaaaacc   240
caagaaactt cgcttccacc caaagcagct gtacttctct gccaggcagg gtgagctgca   300
gaaggtgctt ctcatgctgg ttgatggaat tgatcccaac ttcaaaatgg agcaccaaag   360
taagcgttcc ccattacatg ctgctgcgga ggctggccac gtggacatct gcc           413
```

170

```
<210> 620
<211> 415
<212> DNA
<213> Homo sapien

<400> 620
gaattcggca cgagcggcga cggtggtggt gactgagcgg agcccggtga caggatgttg      60
gtgttggtat taggagatct gcacatccca caccggtgca acagtttgcc agctaaattc     120
aaaaaactcc tggtgccagg aaaaattcag cacattctct gcacaggaaa cctttgcacc     180
aaagagagtt atgactatct caagactctg gctggtgatg ttcatattgt gagaggagac     240
ttcgatgaga atctgaatta tccagaacag aaagttgtga ctgttggaca gttcaaaatt     300
ggtctgatcc atggacatca agttattcca tggggagata tggccagctt agccctgttg     360
cagaggcaat ttgatgtgga cattcttatc tcgggacaca cacacaaatt tgaag          415


<210> 621
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 621
agaattcngc acgagtggca gcctaagccg tgggagggtt ccagtcgaga atgggaagat      60
gaaagacttc agatggaaca gaaataaatg cctttttttga caaacgcagc agtgcgtgcc     120
tctagcttgc aagagcgtta ctcccccttca tagctttaaa aggttttcgc actgcgtgca     180
gttagagtag ctaaatcttg tgtgacgctc cacaaacact tgtaagaatt ttgcagagaa     240
agataaccgt tgccacccaa tgccccccac aggcattcta ctccccagta cctcttaggg     300
tgggagaaat ggtgaagagt tgttcctaca acttgctaac ctagtggaca gggtagtaga     360
ttagcatcat ccggatagat gtgaagagga cggctgtttg ataataatt aaggataaaa      420
t                                                                     421


<210> 622
<211> 431
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(431)
<223> n = A,T,C or G

<400> 622
cccgggggngg ncctggncat aaaactttaa attttactag tgttacttaa tgtatattct      60
aaaaagagaa tgcagtaact aatgccctaa atgtttgatc tctgtttgtc attacttttt     120
caaaattatt ttttctgta aagtataata tataaaactt cttgcttaaa ttgaatttct     180
atattagtgg ttaattgcag tttattaaag ggatcattat cagtaatttc atagcaactg     240
ttctagtgtt ttgtgtttttt aaaacagaat taggaatttg agatatctga ttatatttttt    300
catatgaatc acagacctcg gccgcgacca cgctaagggc gaattccagc acactggcgg     360
ccgctactag tggatccgag ctcggtacca agcttgggcg taatcatggt catagcctgt     420
ttcctgtgtg a                                                          431


<210> 623
<211> 421
<212> DNA
<213> Homo sapien
```

171

```
<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 623
agaattcggc acgaggaaac atggactgcc ccttaaattt tgactgtcct aaaaacctat    60
ttctgattta taatatgctg nctgataaag tgacactaga ngnaccnact nnatggttta   120
aatcttccca ttcccagaat ccagaatttt ggaagccatt ttaaccaggg gtatttttn    180
caccattacc ttttggaact ttccaaatta atggcctttt aaaaaggttg gaaggggaaa   240
accaaaaggc caaaatttta aaaaggttgg ggggggggaac cttaaaaaaa aaaatgggtt   300
ttggggccnc cttttttaa aaggccaaaa nttttttggg ttccaattaa aaaaatttcc    360
ttttttccaac ccaaaattaa gaaaaggnaa aattaaaaaa attncaaaaa ttggnttttt   420
t                                                                   421


<210> 624
<211> 421
<212> DNA
<213> Homo sapien

<400> 624
aagaattcgg cacgagcgga tgtgctcact gacattctac tccaagtcgg agatgcagat    60
ccactccaag tcacacaccg agaccaagcc ccacaagtgc ccacattgct ccaagacctt   120
cgccaacagc tcctacctgg cccagcacat ccgtatacac tcaggggcta agccctacag   180
ttgtaacttc tgtgagaaat ccttccgcca gctctcccac cttcagcagc acacccgaat   240
ccacactggt gatagaccat acaaatgtgc acacccaggc tgtgagaaag ccttcacaca   300
actctccaat ctgcagtccc acagacggca acacaacaaa gataaaccct tcaagtgcca   360
caactgtcat cgggcgtaca cggatgcagc ctcactagag gtgcacctgt ctacgcacac   420
a                                                                   421


<210> 625
<211> 421
<212> DNA
<213> Homo sapien

<400> 625
agaattcggc acgagctact ccttgcgcgc tggcactccg cagcctttaa ggttcgcgcg    60
ggggccaggc aagagttagc catgaagagc ctcaagtccc gcctgaggag gcaggacgtg   120
cccggccccg cgtcgtctgg cgccgccgcc gccagcgcgc atgcagcaga ttggaataaa   180
tatgatgacc gattgatgaa agcagcagaa agggggggatg tagaaaaagt gacgtcaatc   240
cttgctaaaa aggggggtcaa tccaggcaaa ctagatgtgg aaggcagatc tgtcttccat   300
gttgtgacct caaaggggaa tcttgagtgt ttgaatgcca tccttataca tggagttgat   360
attacaacca gtgacactgc agggagaaat gctcttcacc tggctgctaa gtatggacat   420
g                                                                   421


<210> 626
<211> 476
<212> DNA
<213> Homo sapien

<400> 626
agaattgatc tatagattta atgcaatgcc tactaaaatc ccagtacgat ttttttacagg    60
catagacaat agacatagcc aaaacttatt ctaaaatca tatgaagatg cacaggccct    120
agttatacaa tcttgacaaa gaagaataaa gtgggaagaa tctatttgat tttaaggctt    180
accatgtaac tacagtcatc aagagagtgt ggtatcggca gacggtcaga catacagatc   240
aatggaatgt aacagaggac ccagaaatag gcccacacag atatgctcaa tggatatttg   300
acaagcgtgc aaaacaattc aatggaagaa taagctttca aaaaaatggc gttggagcaa   360
```

172

```
ccggacatcc ataggaaaaa atgaacccat acctaaacca taaaccttat ataaaaataa        420
acacaaaatg aatcataggc ttaaatgtaa gctataaaac ttttagagaa aaacac           476
```

```
        <210> 627
        <211> 503
        <212> DNA
        <213> Homo sapien

        <400> 627
tagccctcgg tgaagcccca gaccacagct atgagtccct tcgtgtgacg tctgcgcaga        60
aacatgttct gcatgtccag ctcaaccggc ccaacaagag gaatgccatg aacaaggtct       120
tctggagaga gatggtagag tgcttcaaca agatttcgag agacgctgac tgtcgggcgg       180
tggtgatctc tggtgcagga aaaatgttca ctgcaggtat tgacctgatg gacatggctt       240
cggacatcct gcagcccaaa ggagatgatg tggcccggat cagctggtac ctccgtgaca       300
tcatcactcg ataccaggag accttcaacg tcatcgagag gtgccccaag cccgtgattg       360
ctgccgtcca tgggggctgc attggcggag gtgtggacct tgtcaccgcc tgtgacatcc       420
ggtactgtgc ccaggatgct ttcttccagg tgaaggaggt ggacgtgggt ttggctgccc       480
atgtaggaac actgcagcgc ctg                                               503
```

```
        <210> 628
        <211> 248
        <212> DNA
        <213> Homo sapien

        <400> 628
taagtccagg gggaataact gtaggcattc ctggaatcac tgtcttctgt tccattgtgt        60
cttggttcca gcggctcctc ttccgcttct tacttgggaa gtccaacggc gtggcgttcg       120
ctccggtcgc catggcgccc ccggggacag gcaccggcac ctgctttttc tctgcggcgg       180
cttctccttc gcaagcctcc cggggggagg ggacccgaat gcgctgccgg agcgcgcgga       240
gcccgtcc                                                               248
```

```
        <210> 629
        <211> 99
        <212> DNA
        <213> Homo sapien

        <400> 629
actgccagtc caaaggcatc gtggtgaccg cctacagccc cctcggctct cctgacaggc        60
cctgggccaa gcccgaggac ccttctctcc tggaggatc                              99
```

```
        <210> 630
        <211> 640
        <212> DNA
        <213> Homo sapien

        <400> 630
gaagacatga tgctacactc agctttgggt ctctgcctct tactcgtcac agtttcttcc        60
aaccttgcca ttgcaataaa aaaggaaaag aggcctcctc agacactctc aagaggatgg       120
ggagatgaca tcacttgggt acaaacttat gaagaaggtc tcttttatgc tcaaaaaagt       180
aagaagccat taatggttat tcatcacctg gaggattgtc aatactctca agcactaaag       240
aaagtatttg cccaaaatga agaaatacaa gaaatggctc agaataagtt catcatgcta       300
aaccttatgc atgaaaccac tgataagaat ttatcacctg atgggcaata tgtgcctaga       360
atcatgtttg tagacccttc tttaacagtt agagctgaca tagctggaag atactctaac       420
agattgtaca catatgagcc tcgggattta cccctattga tagaaaacat gaagaaagca       480
ttaagactta ttcagtcaga gctataagag atgatggaaa aaagccttca cttcaaagaa       540
gtcaaatttc atgaagaaaa cctctggcac attgacaaat actaaatgtg caagtatata       600
gattttgtaa tattactatt tagttttttt aatgtgtttg                            640
```

```
<210> 631
<211> 168
<212> PRT
<213> Homo sapien

<400> 631
Glu Asp Met Met Leu His Ser Ala Leu Gly Leu Cys Leu Leu Leu Val
1               5                   10                  15
Thr Val Ser Ser Asn Leu Ala Ile Ala Ile Lys Lys Glu Lys Arg Pro
            20                  25                  30
Pro Gln Thr Leu Ser Arg Gly Trp Gly Asp Asp Ile Thr Trp Val Gln
        35                  40                  45
Thr Tyr Glu Glu Gly Leu Phe Tyr Ala Gln Lys Ser Lys Lys Pro Leu
    50                  55                  60
Met Val Ile His His Leu Glu Asp Cys Gln Tyr Ser Gln Ala Leu Lys
65                  70                  75                  80
Lys Val Phe Ala Gln Asn Glu Glu Ile Gln Glu Met Ala Gln Asn Lys
                85                  90                  95
Phe Ile Met Leu Asn Leu Met His Glu Thr Thr Asp Lys Asn Leu Ser
            100                 105                 110
Pro Asp Gly Gln Tyr Val Pro Arg Ile Met Phe Val Asp Pro Ser Leu
        115                 120                 125
Thr Val Arg Ala Asp Ile Ala Gly Arg Tyr Ser Asn Arg Leu Tyr Thr
    130                 135                 140
Tyr Glu Pro Arg Asp Leu Pro Leu Leu Ile Glu Asn Met Lys Lys Ala
145                 150                 155                 160
Leu Arg Leu Ile Gln Ser Glu Leu
                165


<210> 632
<211> 402
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(402)
<223> n = A,T,C or G

<400> 632
gcccggacgt aggtagtttg ttgggccggg ttctgaggcc ttgcttctct ttactttttcc      60
actctaggcc acgatgccgc agtaccagac ctgggaggag ttcagccgcg ctgccgagaa     120
gctttacctc gctgacccta tgaaggcacg tgtggttctc aaatataggc attctgatgg     180
gaacttgtgt gttaaagtaa cagatgattt agtttgtttg gtgtataaaa cagaccaagc     240
tcaagatgta aagaaaattg agaaattcca cagtcaacta atgcnactta tggtacccaa     300
ggaagcccgc aatgttacca tggaaactga gtgaatggtt tgaaatgaaa ctttgtcgtg     360
tacttaggaa gtaaatatct tttgaattan aaaaagtgtt gg                        402


<210> 633
<211> 402
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(402)
<223> n = A,T,C or G
```

```
        <400> 633
gcggagtcgg gtgggttggc ggctataaag ctggtagcga aggggaggcg ccgcggactg    60
tcctttcgtg gctcactccc tttcctctgc tgccgctcgg tcacgcttgc tctttcacca   120
tgcctggatc acttcctttg aatgcagaag cttgctggcc aaaagatgtg ggaattgttg   180
cccttgagat ctattttcct tctcaatatg ttgatcaagc agagttggaa aaatatgatg   240
gtgtagatgc tggaaagtat accattggct tgggccangc caagatgggc ttctgcacag   300
atagagaaga tattaactct ctttgcatga ctgtggttca gaatcttatg gagagaaata   360
acctttccta tgattgcatt gggcggntgg aagttggaac ag                      402
```

```
        <210> 634
        <211> 386
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(386)
        <223> n = A,T,C or G
```

```
        <400> 634
tgcaggtcga cactagtgga tccaaanaat tcggcacgag gctggcaaga agagacgagg    60
cccggctgtg gagcaactga accgggtgac tgtcccaagc tggactccct ggtggcccag   120
cagctgcaga gcaagaatga gtgtggaatc cttccgacc ccaaggggcc cttccgggag    180
tgccatagca agctggaccc ccagggtgcc gtgcgcgact gtgtctatga ccgctgcctg   240
ctgccaggcc agtctgggcc actgtgtgac gcactggcca cctatgctgc tgcatgccag   300
gctgctggag ccacagtgca cccctggagg agtgaagaac tttgcccact tganctgcca   360
ccncacannc ctatnaggcg tgttct                                        386
```

```
        <210> 635
        <211> 404
        <212> DNA
        <213> Homo sapien
```

```
        <400> 635
gccaccactt cgtagtgttt tggaacaaac caagttaaag aaagaagata tttatgcagt    60
ggagatagtt ggtggtgcta cacgaatccc tgcggtaaaa gagaagatca gcaaattttt   120
cggtaaagaa cttagtacaa cattaaatgc tgatgaagct gtcactcgag gctgtgcatt   180
gcagtgtgcc atcttatcgc ctgctttcaa agtcagagaa ttttctatca ctgatgtagt   240
accatatcca atatctctga gatggaattc tccagctgaa gaagggtcaa gtgactgtga   300
agtcttttcc aaaaatcatg ctgctccttt ctctaaagtt cttacatttt atagaaagga   360
acctttcact cttgaggcct actacagctc tcctcaggat ttgc                    404
```

```
        <210> 636
        <211> 403
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(403)
        <223> n = A,T,C or G
```

```
        <400> 636
gctcactggt ccccagtgcc ctgctggagc aagcctatgc tgtgcagatg gacttcaacc    60
tgctagtgga tgctgtcagc cagaacgctg ccttcctgga gcaaactctt tccagcacca   120
tcaaacagga tgactttacc gctcgtctct ttgacatcca caagcaagtc ctaaaagagg   180
gcattgccca gactgtgttc ctgggcctga atcgctcaga ctacatgttc cagcgcagcg   240
```

```
cagatggctc cccagccctg aaacagatcg aaatcaacac catctctgcc agctttgggg      300
gcctggcctc ccggacccca nctgtgcacc gacatgttct cagtgtcctg agtaagacca      360
aagaagctgg caagatcctc tctaataatc ccagcaaggg act                        403
```

        <210> 637
        <211> 441
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(441)
        <223> n = A,T,C or G

        <400> 637
```
aggtcgacac tagtggatcc aaanaattcg gcacgaggag agagaccctca aaagcaaaaa    60
tagaaggggat gacccaaagt ctgagaggtc tggaattaga tgttgttact ataaggtcag    120
aaaaagaaaa tctgacaaat gaattacaaa aagagcaaga gcgaatatct gaattagaaa    180
taataaattc atcatttgaa aatattttgc aagaaaaaga gcaagagaaa gtacagatga    240
aagaaaaatc aagcactgcc atggagatgc ttcaaacaca attaaaagag ctcaatgaga    300
gagtggcagc cctgcataat gaccaagaag cctgtaaggc caaagagcag aatcttagta    360
gtcaagtaga gtgtcttgaa cttgagaagg ctcagttgct acaaggcctt gatgaggcca    420
aaaataatta tattgtttgc a                                               441
```

        <210> 638
        <211> 404
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(404)
        <223> n = A,T,C or G

        <400> 638
```
gcgctgccgc cgattccgga tctcattgcc acgcgccccc gacgaccgcc cgacgtgcat      60
tcccgattcc ttttggttcc aagtccaata tggcaactct aaaggatcag ctgatttata     120
atcttctaaa ggaagaacag accccccaga ataagattac agttgttggg gttggtgctg     180
ttggcatggc ctgtgccatc agtatcttaa tgaaggactt ggcagatgaa cttgctcttg     240
ttgatgtcat cgaagacaaa ttgaagggag agatgatgga tctccaacat ggcagccttt     300
tcttagaaca ccaaagattg tctntggcaa agactataat gtaactgcaa ctncagctgg     360
cattatcacg ntggggacgt cagaagaagg agaaagccgc ttat                      404
```

        <210> 639
        <211> 404
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(404)
        <223> n = A,T,C or G

        <400> 639
```
gcatgtaccg agcacttcgg ctcctcgcgc gctcgcgtcc cctcgtgcgg gctccagccg      60
cagccttagc ttcggctccc ggcttgggtg gcgcggccgt gccctcgttt tggcctccga     120
acgcggctcg aatggcaagc caaaattcct tccggataga atatgatacc tttggtgaac     180
taaaggtgcc aaatgataag tattatggcg cccagaccgt gagatctacg atgaacttta     240
```

```
agattggagg tgtgacagaa cgcatgccaa ccccagttat taaagctttt ggcatcttga        300
aacgagcggc cgctgaagta aaccaggatt atggtcttga tccaaaaatt gctaatgcaa        360
taatgaangc agcanatgaa gnanctgaag gtaaataaaa tgat                         404
```

        <210> 640
        <211> 401
        <212> DNA
        <213> Homo sapien

        <400> 640
```
ggccaagtca gcttcttctg agagagtctc tagaagacat gatgctacac tcagctttgg         60
gtctctgcct cttactcgtc acagtttctt ccaaccttgc cattgcaata aaaaaggaaa        120
agaggcctcc tcagacactc tcaagaggat ggggagatga catcacttgg gtacaaactt        180
atgaagaagg tctcttttat gctcaaaaaa gtaagaagcc attaatggtt attcatcacc        240
tggaggattg tcaatactct caagcactaa agaaagtatt tgcccaaaat gaagaaatac        300
aagaaatggc tcagaataag ttcatcatgc taaaccttat gcatgaaacc actgataaga        360
atttatcacc tgatgggcaa tatgtgccta gaatcatgtt t                           401
```

        <210> 641
        <211> 404
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(404)
        <223> n = A,T,C or G

        <400> 641
```
ggctcatcgc agacaccagc cgacctaccg gctttcggac catggccaac ctcgagcgta         60
ccttcattgc catcaagcca gatggcgtgc agcgcggcct ggtgggcgag atcatcaaac        120
gattcgagca gaaggggttc cgctggtggc catgaagttc cttcgggctn ttgaagaaca        180
cctgaacagc attacatcga ccctgaacga accgtccttt ctttccnggg gctggtgaaa        240
tacatgaact tnggggccat ngtgggcatg ggcttgggaa ggggntcaat ggtggtggaa        300
aaccggcccg aatgattctt ggggggaana acaaatccaa nttgatttaa aaaccaggca        360
nccattnccg gggggatttt tnttgnnttt naaanttggg nagg                        404
```

        <210> 642
        <211> 366
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(366)
        <223> n = A,T,C or G

        <400> 642
```
tgcaggtcga cactagtgga tccaantaat tcggcacgag gagcaaaggc acatcttaaa         60
tggcagggga actacccttg atacaaccat cagatctcat gagactcact gtcatgagaa        120
cagcagcatg ggggtaacgg ccccatgatt caattacctc ccactgagtc cctcccacga        180
catatgggga ttatgggagc tacaattcaa gatgagattt aggtggggac acagccaaac        240
catttcaata gcataacacc aaaaaaggtt atagagcagt aaaagggttg atggaccatg        300
catcagtaat aataataata attataagtg atctttaaac attcatcagg tgccaagcct        360
cgtgcc                                                                   366
```

        <210> 643
        <211> 403

177

```
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 643
gtgacctgat gagacagtta attatggcca atccacaaat gcagcagttg atacagagaa      60
atccagaaat tagtcatatg ttgaataatc cagatataat gagacaaacg ttggaacttg     120
ccaggaatcc acaatgatgc agganaagat gaagaaccaa gacccaactt tnancaacct     180
aaaaannntt ccnaggggnn ttnanngttt nanggncntt ntccccaant tttnagganc     240
cattgttnat ngntgnncaa aannagttng gnggaaatcc ttttgtttcc ttgggganca     300
atacatcctt tggngaaggt agtcaacctt cccgtncana aattagaaat cccctnccca     360
atccntgggn tccacaaact tcccaaagtt antnagtttc cac                       403

<210> 644
<211> 403
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 644
ggggatgaca gccctaacaa gaactgtttt tgaatcgttg tgcagctcca ggcaatagag      60
tatgtgaagc gatttcagta gaatcactta ctcatcctaa aagaaaacat tattccnant     120
accntccttn nnattnccnt ntttntaannn aaacntanng ntnnntgnnt gttnannggn     180
atnancttta aanntgcant ntnntttant cctccaaatn tttttcggtt tcntntgaga     240
ancaccanaa nctttctttc ccttntcttc agtanttgca anagganacc tccnttnagg     300
actggcntag ngaacgtaat ccatgcttta actgccatta aacagcccca tggttggatt     360
tttttttttt ttngagtngg ctttccaaaa ccttgtcaaa aac                       403

<210> 645
<211> 405
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(405)
<223> n = A,T,C or G

<400> 645
gcgccttcca ggccgcactc cagagccaaa agagctccat ggcggcggcg gccaagccca      60
acaacctttc cctggtggtg cacggaccgg gggacttgcg cctggagaac tatcctatcc     120
ctgaaccagg cccaaatgag gtcttgctga ggatgcattc tgttggaatc ttgtggctta     180
aatgtcacta ctgggagtat gggcnaattg ggaattttat tgngaaaaac ccatggggtt     240
ggacatgaag ttcggacagt cnaaaaagtg ggatcatcgg naaagaccta aaaccaggtg     300
atcggttgca tcacctgggc tcccgaaaaa tgataattnt gaagatggcc atacatntgt     360
accttcatnt tttntggcac cccccnata cggaactttg cggtt                      405

<210> 646
<211> 412
<212> DNA
```

178

```
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 646
ggaacccagt gcctgcagcc atggctcccg gccagctcgc cttatttagt gtctctgaca        60
aaaccggcct tgtggaattt gcaagaaacc tgaccgctct tggtttgaat ctggtcgctt       120
ccggagggac tgcaaaagct ctcagggatg ctggtctggc agtcagagat gtctctgagt       180
tgacgggatt tcctgaaatg ttgggggggac gtgtgaaaac tttgcatcct gcagtccatg      240
ctggaatcct agctcgtaat attccagaag ataatgctga catggccaga cttgatttca       300
atcttataag agttgttgcc tgcaatctct atccctttgt aaagacaagt ggcttctcca       360
ggtgtaactg ttgaggangc tgtgggagca aattgacatt ggtgggagta ac              412

<210> 647
<211> 412
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 647
ggtcgcccgg cgccccagcc cggccgcggc gctccccgcc tccccgctag cgcanncggc        60
ngntctgntc ggctgattnc cagctatgan acaaggagaa tgaaaatatg aagaaaaagc       120
tgaacaaaaa agttanntag ctaaaacagg acttgcagnn ttnaaaacag gtccttgatg       180
gcaaagaaga ggttgagaaa caacntagag aaaatattna aantctaaat tccatggtag       240
aacgccaaga gaaagatctt ggccgtcttc aggtagacat ggatgaactt gaagaaaaga       300
accgaagtat tcangctgcc tggatagtgc atacaaagaa cttactgatc tttacaaagc       360
caatgctgca aangatagtg aggnacanga agctgctctn accgtgaaat ga              412

<210> 648
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 648
ggtcgcccgg cgccccagcc cggccgcggc gctccccgcc tccccgctag cgcagcccgg        60
cggctctgcc cggctgccgc ccggcatgaa catcatggat ttcaacgtga agaaacttgg       120
cgggccgacc gggcaccttt tcttaagccg gcccgtgnaa tttanaaaaa aaaaacttgg       180
ncaagcaaaa aaaaanaaaa ttggncctta ncttgaaaan cttcttaaca aaacttaatg       240
gtccaaaata ttgaccgaaa aaaaaatgna ncaaaccnna ntgnttttgc acccaatncn       300
aatnccnnga nnaaaaaaat tgnttattaa aaacntgaat aaaaancccc aannctatna       360
acaaccccga acttttttgga cnatntntna ntgatnnnng aacntaattt ggc             413

<210> 649
<211> 409
<212> DNA
<213> Homo sapien
```

179

```
<220>
<221> misc_feature
<222> (1)...(409)
<223> n = A,T,C or G

<400> 649
actagtggat ccaaagantt cggcacgagg gcanggtgtn cgggcgggaa ggggcacggg      60
cacccccgcg gtcctcggga ggctagagat catggaaggg aagtggttgc tgtgtatgtt     120
actggtgctt ggaactgcta ttgttgaggc tcatgatgga catgatgatg atgtgattga     180
tattgaggat gaccttgacg atgtcattga agaggtagaa gactcaaaac cagataccac     240
tgctcctcct tcatctccca aggttactta caaagctcca nttccaacag gggaagtata     300
ttttgctgat tcttttgaca gaggaactct gtcagggtgg attttatnca nagccaanaa     360
agacnatccn atgatgaaaa ttgccnaata tnatggaaaa gtgggaggt                 409


<210> 650
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 650
ggcctgagga ccggcaacat ggtgcggtcg gggaataagg cagctgttgt gctgtgtatg      60
gacgtgggct ttaccatgag taactccatt cctggtatag aatccccatt tgaacaagca     120
aagaaggtga taaccatgtt tgtacagcga caggtgtttg ctgagaacaa ggatgagatt     180
gctttagtcc tgtttggtac agatggcact gacaatcccc tttctggtgg ggatcagtat     240
cagaacatca cagtgcacag acatctgatg ctaccagatt ttgatttgct ggaggacatt     300
gaaagcaaaa tccaaccagg ttctcaacag gctgacttcc tggatgcact aatcgtgagc     360
atggatgtga ttcacatgaa acaataggaa agaagtttga gaanaagcat att            413


<210> 651
<211> 441
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(441)
<223> n = A,T,C or G

<400> 651
ctagtggatc caaaganttc ggcacgaggc aaccagtgac actgcaggga gaaatgctct      60
tcacctggct gctaagtatg gacatgcatt gtgcctacaa aaacttctac agtacaattg     120
tcccactgag catgcagacc tgcagggaag aactgcactt cacgatgccg caatggcaga     180
ttgtccttct agcatacagc tgctttgtga ccatggggcc tctgtgaatg ccaaagatgt     240
agacgggcgg acaccacttg ttctggctac tcagatgagt aggccaacaa tgtgtcaact     300
gctgatagat agaggagcgg atgttaattc cagagacaaa caaaacagaa ctgccctcat     360
gctaggttgc gaatatggtt gcagagatgc agtagaagtc ttaattaaaa atgggtgctg     420
atataagctt gctggatgcg c                                               441


<210> 652
<211> 412
<212> DNA
<213> Homo sapien
```

```
<400> 652
gcttctctct cctgtgcaaa atggcaactc ttaaggaaaa actcattgca ccagttgcgg      60
aagaagaggc aacagttcca aacaataaga tcactgtagt gggtgttgga caagttggta     120
tggcgtgtgc·tatcagcatt ctgggaaagt ctctggctga tgaacttgct cttgtggatg     180
ttttggaaga taagcttaaa ggagaaatga tggatctgca gcatgggagc ttatttcttc     240
agacacctaa aattgtggca gataaagatt attctgtgac cgccaattct aagattgtag     300
tggtaactgc aggagtcccg tcagcaagaa ggggagagtc ggctcaatct ggtgcagaga     360
aatggtaatg tcttcaaatt cattattcct cagatccgca agtacagtcc tg            412

       <210> 653
       <211> 414
       <212> DNA
       <213> Homo sapien

       <400> 653
gccagttcaa gtccaccctg ccggacgccg atagggagcg cgaggccatc ctggccatcc      60
acaaggaggc ccagaggatc gctgagagca accacatcaa gctgtcgggc agcaacccct     120
acaccaccgt caccccgcaa atcatcaact ccaagtggga gaaggtgcag cagctggtgc     180
caaaacggga ccatgccctc ctggaggagc agagcaagca gcagtccaac gagcacctgc     240
gccgccagtt cgccagccag gccaatgttg tggggccctg gatccagacc aagatggagg     300
agatcgggcg catctccatt gagatgaacg ggaccctgga ggaccagctg agccacctga     360
agcagtatga acgcagcatc gtggactaca agcccaacc tggaccttgt tgga            414

       <210> 654
       <211> 404
       <212> DNA
       <213> Homo sapien

       <400> 654
gcatggcgga gctgacggtg gaggttcgcg gctccaacgg ggctttctac aagggattta      60
tcaaagatgt ccacgaagac tccctcacag ttgttttttga aaataattgg caaccagaac     120
gccaggttcc gtttaatgaa gtgcgattac caccaccacc tgatataaaa aaagaaatta     180
gtgaaggaga tgaagtagag gtatattcaa gagcaaatga ccaagagcca tgtggatggt     240
ggctggctaa agttcggatg atgaaaggcg agttttatgt cattgaatat gctgcttgtg     300
atgccactta caatgaaata gtcacatttg aacgacttcg gcctgtcaat caaaataaaa     360
ctgtcaaaaa aaataccttc tttaagtgca cagtggatgt tcct               404

       <210> 655
       <211> 402
       <212> DNA
       <213> Homo sapien

       <400> 655
gggcaagatc accattagca aatggaaatt acatttgaaa gccattagac ttataggtga      60
tgcaagcatc taagagagag gttaatcaca ctatagaggc ataagtggta tcagttttca     120
ttttttctaat tgtttaaact gtgtttttata ccagtgtttg caagtaattg ggtgttagct     180
tgagatggtt aaaggtggtt tggggaggga cttcgttgta atggttttgc tgtaaaaaat     240
gtttccaact ccgctgaaat gttgctgaaa agcatggtgc tggtaacagt tcaacaatcc     300
gtggctgctc attcttgcct actttactct cccactgaag caggttagcg tttgaaggtg     360
gtatggaaaa cctgcatgcc tgttcaattc ttttgtttct tc                402

       <210> 656
       <211> 416
       <212> DNA
       <213> Homo sapien

       <400> 656
```

181

```
gaatcggcac gaggtcagcc gcgaggtgtc cggcatcaag gccgcctacg aggccgagct    60
cggggatgcc cgcaagaccc ttgactcagt agccaaggag cgcgcccgcc tgcagctgga   120
gctgagcaaa gtgcgtgagg agtttaagga gctgaaagcg cgcaataccaa agaaggaggg   180
tgacctgata gctgctcagg ctcggctgaa ggacctggag gctctgctga actccaagga   240
ggccgcactg agcactgctc tcagtgagaa gcgcacgctg gagggcgagc tgcatgatct   300
gcggggccag gtggccaagc ttgaggcagc cctaggtgag gccaagaagc aacttcagga   360
tgagatgctg cggcgggtgg atgctgagaa caggctgcag accatgaagg aggaac       416
```

```
<210> 657
<211> 402
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(402)
<223> n = A,T,C or G

<400> 657
```
```
gctccaagca gacacaatgg taagaatggt gcctgtcctg ctgtctctgc tgctgcttct    60
gggtcctgct gtcccccagg agaaccaaga tggtcgttac tctctgacct atatctacac   120
tgggctgtcc aagcatgttg aagacgtccn cgnntttcag gcccttggct cactcaatga   180
cctccagttc tttagataca acagtaaaga caggaagtct cagcccatgg gactctggag   240
acaggtggaa ggaatggagg attggaagca ggacagccaa cttcagaagg ccagggagga   300
catctttatg gagaccctga aagacattgt ggagtattac aacgacagta acgggtctca   360
cgtattgcag ggaaggtttg gtttgtgaga tcgagaataa ca                      402
```

```
<210> 658
<211> 404
<212> DNA
<213> Homo sapien

<400> 658
```
```
gcaagacgcc acttcccta tcatagaaga gcttatcacc tttcatgatc acgccctcat     60
aatcattttc cttatctgct tcctagtcct gtatgccctt ttcctaacac tcacaacaaa   120
actaactaat actaacatct cagacgctca ggaaatagaa accgttgaac tatcctgccc   180
gccatcatcc tagtcctcat cgccctccca tccctacgca tcctttacat aacagacgag   240
gtcaacgatc cctcccttac catcaaatca attggccacc aatggtactg aacctacgag   300
tacaccgact acggcggact aatcttcaac tcctacatac ttcccccatt attcctagaa   360
ccaaggcgga cctgcgactc cttgacgttg acaatcgagt agta                    404
```

```
<210> 659
<211> 411
<212> DNA
<213> Homo sapien

<400> 659
```
```
ggcacgaggg tcgccgttac tccgaggaga taccagtcgg tagaggagaa gtcgaggtta    60
gagggaactg ggaggcactt tgctgtctgc aatcgaagtt gagggtgcaa aaatgcagag   120
taataaaact tttaacttgg agaagcaaaa ccatctccaa gaaaagcatc atcaacatca   180
ccaccagcag cagcaccacc agcagcaaca gcagcagccg ccaccaccgc caatacctgc   240
aaatgggcaa caggccagca gccaaaatga aggcttgact attgacctga agaattttag   300
aaaaccagga gagaagacct tcacccaacg aagccgtctt tttgtgggaa atcttcctcc   360
cgacatcact gaggaagaaa tgaggaaact atttgagaaa tatggaaagg c            411
```

```
<210> 660
<211> 412
<212> DNA
```

```
<213> Homo sapien

<400> 660
ggcacgaggg ggatttgggt cgcagttctt gtttgtggat cgctgtgatc gtcacttaac        60
aatgcagatc ttcgtgaaga ctctgactgg taagaccatc accctcgagg ttgagcccag       120
tgacaccatc gagaatgtca aggcaaagat ccaagataag gaaggcatcc ctcctgacca       180
gcagaggctg atctttgctg gaaaacagct ggaagatggg cgcaccctgt ctgactacaa       240
catccagaaa gagtccaccc tgcacctggt gctccgtctc agaggtggga tgcaaatctt       300
cgtgaagaca ctcactggca agaccatcac ccttgaggtc gagcccagtg acaccatcga       360
gaacgtcaaa gcaaagatcc aggacaagga aggcattcct cctgaccagc ag              412
```

```
<210> 661
<211> 411
<212> DNA
<213> Homo sapien

<400> 661
ggcacgaggg gagatcgatg atcttgccag taatgtagag acagtgtcta aggccaaggg        60
aaacctcgag aagatgtgcc gcaccctgga ggaccaggtg agtgagctga agtcaaagga       120
ggaggaacag cagcgactga tcaacgacct gacaacccag agaggacgac tgcagaccga       180
atccggtgaa ttttccaggc agcttgatga gaaggaagcg ctggtatctc agttatcaag       240
gggcaaacag gcattcactc aacagattga ggagctaaag aggcaacttg aagaggaagt       300
aaaggccaag aacgcgctgg cccacgccct gcagtcctcc cgccatgact gtgacctgct       360
gcgggaacag tacgaggagg agcaggagtc taaggctgaa ctgcagaggg c               411
```

```
<210> 662
<211> 414
<212> DNA
<213> Homo sapien

<400> 662
ggcacgaggc tcacaggacc agccactagc gcagcctcga gcgatggcct atgtccccgc        60
accgggctac cagcccacct acaacccgac gctgccttac taccagccca tcccgggcgg       120
gctcaacgtg ggaatgtctg tttacatcca aggagtggcc agcgagcaca tgaagcggtt       180
cttcgtgaac tttgtggttg ggcaggatcc gggctcagac gtcgccttcc acttcaatcc       240
gcggtttgac ggctgggaca aggtggtctt caacacgttg cagggcggga agtggggcag       300
cgaggagagg aagaggagca tgcccttcaa aaagggtgcc gcctttgagc tggtcttcat       360
agtcctggct gagcactaca aggtggtggt aaatggaaat cccttctatg agta            414
```

```
<210> 663
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 663
gcggcgctcc ttcctcctcg gctcgcgtct cactcagtgt accttctagt cccgccatgg        60
ccgctctcac ccgggacccc cagttccaga agctgcagca atggtaccgc gagcaccgct       120
ccgagctgaa cctgcgccgn ctcttcgatg ccaacaagga ccgcttnaac cacttcagct       180
tgaccctcaa caccaaccat gggcatatcc tggnggatta ctccaagaac ctggtgacgg       240
aggacgtgat gcggatgctg gtggacttgg ccaagtccag gggcgtggag ccgaccgggg       300
agcggatgtt caatggtgan aagatcaact acacccgang tcgagccgt gctgcacgtg       360
gctctgcgga accggttcaa acacacccat nctgggagac ggcaangatg tgat            414
```

183

```
        <210> 664
        <211> 411
        <212> DNA
        <213> Homo sapien

        <400> 664
ggcacgaggc ttagatgccg tgccatgctc cacaaccatc aacaggaacc gcatgggccg      60
agacaagaag agaaccttcc ccctttgctt tgatgaccat gacccagctg tgatccatga     120
gaacgcatct cagcccgagg tgctggtccc catccgctgg acatggagat cgatgggcag     180
aagctgcgag acgccttcac ctggaacatg aatgagaagt tgatgacgcc tgagatgttt     240
tcagaaatcc tctgtgacga tctggatttg aacccgctga cgtttgtgcc agccatcgcc     300
tctgccatca dacagcagat cgagtcctac cccacggaca gcatcctgga ggaccagtca     360
gaccagcgcg tcatcatcaa gctgaacatc catgtgggaa acatttccct g              411

        <210> 665
        <211> 409
        <212> DNA
        <213> Homo sapien

        <400> 665
ggcacgaggg cgaatcgcag cttctgagac cagggttgct ccgtccgtgc tccgcctcgc      60
catgacttcc tacagctatc gccagtcgtc ggccacgtcg tccttcggag gcctgggcgg     120
cggctccgtg cgttttgggc cggggggtcgc ttttcgcgcg cccagcattc acggggggctc     180
cggcggccgc ggcgtatccg tgtcctccgc ccgctttgtg tcctcgtcct cctcggggggg     240
ctacggcggc ggctacggcg gcgtcctgac cgcgtccgac gggctgctgg cgggcaacga     300
gaagctaacc atgcagaacc tcaacgaccg cctggcctcc tacctggaca aggtgcgcgc     360
cctggaggcg gccaacggcg agctagaggt gaagatccgc gactggtac               409

        <210> 666
        <211> 411
        <212> DNA
        <213> Homo sapien

        <400> 666
ggcacgaggt gagctgaacc aagaaggagg aggggggtcgg gcctccgagg aaggcctagc      60
tgctgctgct gccaggaatt ccaggttgga ggggcggcaa cctcctgcca gccttcaggc     120
cactctcctg tgcctgccag aagagacaga gcttgaggag agcttgagga gagcaggaaa     180
gcagcctccc ccgttgcccc tctggatcca ctgcttaaat acggacgagg acagggccct     240
gtctcctcag cttcaggcac caccactgac ctgggacagt gaatcgacaa tgccgtcttc     300
tgtctcgtgg ggcatcctcc tgctggcagg cctgtgctgc ctggtccctg tctccctggc     360
tgaggatccc cagggagatg ctgcccagaa gacagataca tcccaccatg a              411

        <210> 667
        <211> 412
        <212> DNA
        <213> Homo sapien

        <400> 667
ggcacgagga ttatccagaa ccttgagaaa gacagacaaa aattggtcag cagccaggag      60
caagacagag aacagttaat tcagaagctt aattgtgaaa aagatgaagc tattcagact     120
gccctaaaag aatttaaatt ggagagagaa gttgttgaga aagagttatt agaaaaagtt     180
aaacatcttg agaatcaaat agcaaaaagt cctgccattg actctaccag aggagattct     240
tcaagcttag ttgctgaact tcaagaaaag cttcaggaag aaaaagctaa gtttctagaa     300
caacttgaag agcaagaaaa aagaaagaat gaagaaatgc aaaatgttcg aacatctttg     360
attgcggaac aacagaccaa ttttaacact gttttaacaa gagagaaaat ga              412

        <210> 668
        <211> 411.
```

```
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(411)
        <223> n = A,T,C or G

        <400> 668
ggcacgaggg tctnggcgc gctcananna gatnatcaac ctgcgagagg tcagcaccng    60
cttccncctg ncacccgggg agtannnntt aattgtgaan aagatgaaag ctattcagac   120
ttgncctnnn ataatttnaa ttggngagga gaanntnttn tnatcaaaag ttnttttana   180
aaaagntann ncatcttnnn ntaatnaaag tattacanna ntnactgccn attgacttta   240
ccanaagaga angcttcnng gctttgttgc tgaancttaa tnaaaaggnt atggggantn   300
nananaaannt aanttnnntn ganntaatct ttgnttgcag cttatcatnn ttngntatna  360
aannaganaa tanttctaat nnntgttttc gaatctatna tnnctnnttt t            411

        <210> 669
        <211> 412
        <212> DNA
        <213> Homo sapien

        <400> 669
ggcacgaggg cagagaaacc agattctctc tcagcagtta cagcagatgg aagctgagca    60
taatactttg aggaacactg tggaaacaga aagagaggag tccaagattc tactggaaaa   120
gatggaactt gaagtggcag agagaaaatt atccttccat aatctgcagg aagaaatgca   180
tcatctttta gaacagtttg agcaagcagg ccaagcccag gctgaactag agtctcggta   240
tagtgctttg gagcagaagc acaaagcaga aatggaagag aagacctctc atattttgag   300
tcttcaaaag actggacaag agctgcagtc tgcctgtgat gctctaaagg atcaaaattc   360
aaagcttctc caagataaga atgaacaggc agttcagtca gcccagacca tt           412

        <210> 670
        <211> 411
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(411)
        <223> n = A,T,C or G

        <400> 670
ggcacgagga gagggacttc cagagaagct ggttataaaa aaccagcaat ttcacaagga    60
acgagagcag ccacccagat ttgcacagcc tggctccttt gagtatgaat atgccatgcg   120
ctggaaggca ctcattgaga tggagaagca gcancaggac caagtggacc gcaacatcaa   180
ggaggctcgt gagaagctgg agatggagat ggaagctgca cgccatgagc accaggtcat   240
gctaatgaga caggatttga tgaggcgcca agaagaactt cggaggatgg aagagctgca   300
caaccaagag gtgcaaaaac gaaagcaact ggagctcagg caggaggaag ancgcaggcg   360
ccgtgaagaa ganatgcggc ggcagcaaga agaaatgatg cggcgacagc a            411

        <210> 671
        <211> 411
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(411)
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<223> n = A,T,C or G

<400> 671
ggcacgaggg caacatccag cctcctgaca aggtgatccg ggcgggcccc gcaggaattt      60
tatcccctca ccggcctcac actagtatcg catgtccact atccagaacc tccaatcttt     120
cgaccccttt gctgatgcaa ctaagggtga cgacttactn ccggcaggga ctgaggatta     180
cattcatata agaatccagc aacggaacgg cagaaagaca ctgactactg ttcagggcat     240
tgcagatgat tatgacaaaa agaaacttgt gaaagctttc aaaaagaaat ttgcctgtaa     300
tggtactgtg attgaacatc ctgaatacgg agaggttatt cagcttcaag gtgaccaaag     360
aaaaaacatc tgccagtttc tcttggaggt tggcattgta aaggaggaac a              411

<210> 672
<211> 409
<212> DNA
<213> Homo sapien

<400> 672
ggcacgaggc ccactccacc ttactaccag acaaccttag ccaaaccatt tacccaaata      60
aagtataggc gatagaaatt gaaacctggc gcaatagata tagtaccgca agggaaagat     120
gaaaaattat aaccaagcat aatatagcaa ggactaaccc ctataccttc tgcataatga     180
attaactaga aataactttg caaggagagc caaagctaag accccgaaa ccagacgagc      240
tacctaagaa cagctaaaag agcacacccg tctatgtagc aaaatagtgg gaagatttat     300
aggtagaggc gacaaaccta ccgagcctgg tgatagctgg ttgtccaaga tagaatctta     360
gttcaacttt aaatttgccc acagaaccct ctaaatcccc ttgtaaatt                409

<210> 673
<211> 412
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(412)
<223> n = A,T,C or G

<400> 673
ggcacgaggg gaaaanctgg gccccntctn cacagccgac caanggcagc gggctctgcc      60
cggcgccgct ttctgcgacc tggccgtcag ccccacgtcg ccggcctgga ggggcaaaga     120
ggacgagggg gccgcggctt cctccgggga ccttggcttg cctggattgc caggagctgg     180
aagttgacat tgagtctagg ctgaggatgg aaggtgtgga gctgaaggaa gaatggcagg     240
atgaagattt tccaatacct ttaccagaag atgacagcat tgaagcagat acactagatg     300
gaactgatcc agacagacag cctggctcct tagaagttaa tgggaacaaa gtaaggaaga     360
aactgatggc cccagacatc agcctgaccc tggatcctgg tgaagactct ct             412

<210> 674
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

<400> 674
gcacagcctc acttctaacc ttctggaacc cacccaccac tgccaagctc actattgaat      60
ccacgccgtt caatgtcgca gaggggaagg aggttcttct actcgcccac aacctgcccc     120
agaatcgtat tggttacagc tggtacaaag gcgaaagagt ggatggcaac agtctaattg     180
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186

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taggatatgt aataggaact caacaagcta ccccagggcc cgcatacagt ggtcgagaga    240
caatataccc caatgcatcc ctgctgatcc agaacgtcac ccagaatgac acaggattct    300
ataccctaca agtcataaag tcagatcttg tgaatgaaga agcaaccgga cagttccatg    360
tatacccgga gctgcccaag ccctccatct ncagcaacaa ctccaacccc gtg           413
```

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        <210> 675
        <211> 411
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(411)
        <223> n = A,T,C or G

        <400> 675
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agaggatgag gaggaatcct tgaatgaagt aggctatgat gacatcggtg gttgcaggaa    120
gcagctagct caaataaagg agatggtgga gctgccactg agacatnctg cgctctttaa    180
ggngattggt gtaaagcctc ctcggggaat cttgttgtat gggccttctg ggacagggaa    240
gaccctgatt gctcgagctg tggcaaatga aactggagcc ttcttctttc tgatcaatgg    300
tcctgaaatc attgancaaa ttggctggtg agtctgagag caaccttcgt aaagcctttg    360
aggaagctga aaagaatgct nctgctatca tcttcatcga tgaacttgat g            411
```

```
        <210> 676
        <211> 413
        <212> DNA
        <213> Homo sapien

        <220>
        <221> misc_feature
        <222> (1)...(413)
        <223> n = A,T,C or G

        <400> 676
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ggtgcgagga gccgcggggc tgtgctcggc ggccaagggg acagcgcgtg ggtggccgag    120
gatgctgcgg ggcggtagct ccngcgcccc tccttggtga ctgcttgcgc cgngcctcac    180
acagccgaag gcgggctcgg cgcacagtcn gctgctccgc gctcgcgccc ggcggcgctc    240
caggtgctga cagcgcgaga gagcgcnggn cctcaggagc aaggcgaatg tatgacaaca    300
tgtccacaat ggtgtacata aaggaagaca agttggagaa gcttacacan gatgaaatta    360
ttttctaaga caaaagcnag taaattcang gggcctggga aagctttgaa gaa          413
```

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        <210> 677
        <211> 410
        <212> DNA
        <213> Homo sapien

        <400> 677
ggcacgaggg ccaagtcagc ttcttctgag agagtctcta gaagacatga tgctacactc    60
agctttgggt ctctgcctct tactcgtcac agtttcttcc aaccttgcca ttgcaataaa    120
aaaggaaaag aggcctcctc agacactctc aagaggatgg gggagatgac atcacttggg    180
tacaaactta tgaagaaggt ctcttttatg ctcaaaaaag taagaagcca ttaatggtta    240
ttcatcacct ggaggattgt caatactctc aagcactaaa gaaagtattt gcccaaaatg    300
aagaaataca agaaatggct cagaataagt tcatcatgct aaaccttatg catgaaacca    360
ctgataagaa tttatcacct gatgggcaat atgtgcctag aatcatgttt              410
```

```
        <210> 678
```

```
<211> 410
<212> DNA
<213> Homo sapien

<400> 678
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catgatgaaa aagggccaca gacggaaaaa ctggactgaa agatggtttg tactaaaacc     120
caacataatt tcttactatg tgagtgagga tctgaaagga taagaaagga gacattctct     180
tggatgaaaa ttgctgtgta gagtccttgc ctgacaaaga tggaaagaaa tgcctttttc     240
tcgtaaaatg ttttgataag acttttgaaa tcagtgcttc agataagaag aagaaacagg     300
agtggattca agccattcat tctactattc atctgttgaa gctgggcagc cctccaccac     360
acaaagaagc ccgccagcgt cggaaagaac tccggaagaa gcagctggct              410


<210> 679
<211> 410
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(410)
<223> n = A,T,C or G

<400> 679
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acttgtctca ctagtgccta aatgtagtaa aggctgctta agttttgtat gtagttggat     180
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<210> 680
<211> 410
<212> DNA
<213> Homo sapien

<400> 680
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gtctacgggt gggtcctgga actttggccc ccaggactct aatgacaaca aatggggtga     180
agggaacaaa atgacatctg gggtctctca gggagaatgg aaacagccga ctgggtctga     240
tgagttgaaa attggagaat ggagtggtcc aaaccaacca aattctagca ctggagcatg     300
ggacaatcaa aagggccacc ccctccctga aaaccaaggc aatgcccagg ctccctgttg     360
gggaagatct tccagctcca caggaagtga agttggaggt caaagcactg                 410


<210> 681
<211> 402
<212> DNA
<213> Homo sapien

<400> 681
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tataacctgc ctttgcctgg gggagtggtg cctcgcatgc tgataacaat tctgggcacg     120
gtgaagccca atgcaaacag aattgcttta gattccaaa gagggaatga tgttgccttc      180
cactttaacc cacgcttcaa tgagaacaac aggagagtca ttgtttgcaa tacaaagctg     240
gataataact ggggaaggga agaaagacag tcggttttcc catttgaaag tgggaaacca     300
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```

```
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         <210> 682
         <211> 401
         <212> DNA
         <213> Homo sapien

         <400> 682
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ggatcagcgt aggtgagctg tggccttttg cgaggtgctg cagccatagc tacgtgcgtt   120
cgctacgagg attgagcgtc tccaccccatc ttcttgtgct tcaccatcta cataatgaat   180
cccagtatga agcagaaaca agaagaaatc aaagagaata taaagaatag ttctgtccca   240
agaagaactc tgaagatgat tcagccttct gcatctggat ctcttgttgg aagagaaaat   300
gagctgtccg caggcttgtc caaaaggaaa catcggaatg accacttaac atctacaact   360
tccagccctg gggttattgt cccagaatct agtgaaaata a                       401

         <210> 683
         <211> 3255
         <212> DNA
         <213> Homo sapien

         <400> 683
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<210> 684
<211> 2993
<212> DNA
<213> Mus musculus

<400> 684
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<210> 685
<211> 486
<212> PRT
<213> Homo sapien

<400> 685

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            20   25   30

Asp Gly His Arg Leu Cys Ser Asp Leu Met Asn Cys Leu His Glu Arg
        35   40   45

Ala Arg Ile Glu Lys Ala Tyr Ala Gln Gln Leu Thr Glu Trp Ala Arg
    50   55   60

Arg Trp Arg Gln Leu Val Glu Lys Gly Pro Gln Tyr Gly Thr Val Glu
65   70   75   80

Lys Ala Trp Met Ala Phe Met Ser Glu Ala Glu Arg Val Ser Glu Leu
                85   90   95

His Leu Glu Val Lys Ala Ser Leu Met Asn Asp Asp Phe Glu Lys Ile
            100   105   110

Lys Asn Trp Gln Lys Glu Ala Phe His Lys Gln Met Met Gly Gly Phe
            115   120   125

Lys Glu Thr Lys Glu Ala Glu Asp Gly Phe Arg Lys Ala Gln Lys Pro
        130   135   140

Trp Ala Lys Lys Leu Lys Glu Val Glu Ala Ala Lys Lys Ala His His
145   150   155   160

Ala Ala Cys Lys Glu Glu Lys Leu Ala Ile Ser Arg Glu Ala Asn Ser
                165   170   175

Lys Ala Asp Pro Ser Phe Asn Pro Glu Gln Leu Lys Lys Leu Gln Asp
            180   185   190

Lys Ile Glu Lys Cys Lys Gln Asp Val Leu Lys Thr Lys Glu Lys Tyr
            195   200   205

Glu Lys Ser Leu Lys Glu Leu Asp Gln Gly Thr Pro Gln Tyr Met Glu
    210   215   220

Asn Met Glu Gln Val Phe Glu Gln Cys Gln Gln Phe Glu Glu Lys Arg
225   230   235   240

Leu Arg Phe Phe Arg Glu Val Leu Leu Glu Val Gln Lys His Leu Asn
            245   250   255

Leu Ser Asn Val Ala Gly Tyr Lys Ala Ile Tyr His Asp Leu Glu Gln
            260   265   270

Ser Ile Arg Ala Ala Asp Ala Val Glu Asp Leu Arg Trp Phe Arg Ala
        275   280   285

Asn His Gly Pro Gly Met Ala Met Asn Trp Pro Gln Phe Glu Glu Trp
    290   295   300

Ser Ala Asp Leu Ile Arg Thr Leu Ser Arg Arg Glu Lys Lys Lys Ala
305   310   315   320

Thr Asp Gly Phe Thr Leu Thr Gly Ile Asn Gln Thr Gly Asp Gln Phe
            325   330   335

Leu Pro Ser Lys Pro Ser Ser Thr Leu Asn Val Pro Ser Asn Pro Ala
            340   345   350

Gln Ser Ala Gln Ser Gln Ser Ser Tyr Asn Pro Phe Glu Asp Glu Asp
        355   360   365

Asp Thr Gly Ser Thr Val Ser Glu Lys Glu Asp Ile Lys Ala Lys Asn
    370   375   380

Val Ser Ser Tyr Glu Lys Thr Gln Ser Tyr Pro Thr Asp Trp Ser Asp
385   390   395   400

Asp Glu Ser Asn Asn Pro Phe Ser Ser Thr Asp Ala Asn Gly Asp Ser
            405   410   415

Asn Pro Phe Asp Asp Ala Thr Ser Gly Thr Glu Val Arg Val Arg
            420   425   430

Ala Leu Tyr Asp Tyr Glu Gly Gln Glu His Asp Glu Leu Ser Phe Lys
        435   440   445

Ala Gly Asp Glu Leu Thr Lys Met Glu Asp Glu Asp Glu Gln Gly Trp
    450   455   460

Cys Lys Gly Arg Leu Asp Asn Gly Gln Val Gly Leu Tyr Pro Ala Asn
465   470   475   480

Tyr Val Glu Ala Ile Gln

485

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<210> 687
<211> 73
<212> PRT
<213> Homo sapiens

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Val Phe Thr Cys Val Asp Ser Ser Val Phe Arg Met Pro Leu Glu Glu
                 20   25   30

Asn Leu Cys Leu Phe Gln Leu Leu Ile His His Ala Lys Arg Asp Tyr
                 35   40   45

Pro Val Lys Asn Tyr Gln Ile His His Leu Gln Phe Gln Gln Thr Thr
     50   55   60

Ser Val Ser Ser Lys Ile Pro Phe Asp
65   70

193

<210> 688
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<210> 689
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195

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<211> 2265
<212> DNA
<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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Lys Val Leu Asn Lys Gly Phe Gln Ser Ser Gln Ala Leu Arg Val Cys
                20                  25                  30
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196

Asn Asn Tyr Trp Ile Arg Glu Asn Pro Asn Leu Asn Ser Thr Gln Glu
        35   40   ·45

Val Asn Glu Leu Leu Leu Gly Met Ala Ser Gln Ile Ser Glu Leu Glu
    50   55   60

Asp Asn Ile Val Val Glu Asp Leu Arg Asp Tyr Trp Pro Gly Pro Gly
65   70   75   80

Lys Phe Ser Arg Thr Asp Tyr Val Ala Ser Ser Ile Gln Arg Gly Arg
            85   90   95

Asp Met Gly Leu Pro Ser Tyr Ser Gln Ala Leu Leu Ala Phe Gly Leu
            100   105   110

Asp Ile Pro Arg Asn Trp Ser Asp Leu Asn Pro Asn Val Asp Pro Gln
        115   120   125

Val Leu Glu Ala Thr Ala Ala Leu Tyr Asn Gln Asp Leu Ser Gln Leu
    130   135   140

Glu Leu Leu Leu Gly Gly Leu Leu Glu Ser His Gly Asp Pro Gly Pro
145   150   155   160

Leu Phe Ser Ala Ile Val Leu Asp Gln Phe Val Arg Leu Arg Asp Gly
            165   170   175

Asp Arg Tyr Trp Phe Glu Asn Thr Arg Asn Gly Leu Phe Ser Lys Lys
            180   185   190

Glu Ile Glu Asp Ile Arg Asn Thr Thr Leu Arg Asp Val Leu Val Ala
    .   195   200   205

Val Ile Asn Ile Asp Pro Ser Ala Leu Gln Pro Asn Val Phe Val Trp
    210   215   220 .

His Lys Gly Ala Pro Cys Pro Gln Pro Lys Gln Leu Thr Thr Asp Gly
225   230   235   240

Leu Pro Gln Cys Ala Pro Leu Thr Val Leu Asp Phe Phe Glu Gly Ser
            245   250   255

Ser Pro Gly Phe Ala Ile Thr Ile Ile Ala Leu Cys Cys Leu Pro Leu
            260   265   270

Val Ser Leu Leu Leu Ser Gly Val Val Ala Tyr Phe Arg Gly Arg Glu
    275   280   285

His Lys Lys Leu Gln Lys Lys Leu Lys Glu Ser Val Lys Lys Glu Ala
    290   295   300

Ala Lys Asp Gly Val Pro Ala Met Glu Trp Pro Gly Pro Lys Glu Arg
305   310   315   320

Ser Ser Pro Ile Ile Ile Gln Leu Leu Ser Asp Arg Cys Leu Gln Val
            325   330   335

Leu Asn Arg His Leu Thr Val Leu Arg Val Val Gln Leu Gln Pro Leu

                340   345   350

Gln Gln Val Asn Leu Ile Leu Ser Asn Asn Arg Gly Cys Arg Thr Leu
        355   360   365

Leu Leu Lys Ile Pro Lys Glu Tyr Asp Leu Val Leu Leu Phe Ser Ser
    370   375   380

Glu Glu Glu Arg Gly Ala Phe Val Gln Gln Leu Trp Asp Phe Cys Val
385   390   395   400

Arg Trp Ala Leu Gly Leu His Val Ala Glu Met Ser Glu Lys Glu Leu
            405   410   415

Phe Arg Lys Ala Val Thr Lys Gln Gln Arg Glu Arg Ile Leu Glu Ile
        420   425   430

Phe Phe Arg His Leu Phe Ala Gln Val Leu Asp Ile Asn Gln Ala Asp
        435   440   445

Ala Gly Thr Leu Pro Leu Asp Ser Ser Gln Lys Val Arg Glu Ala Leu
    450   455   460

Thr Cys Glu Leu Ser Arg Ala Glu Phe Ala Glu Ser Leu Gly Leu Lys
465   470   475   480

Pro Gln Asp Met Phe Val Glu Ser Met Phe Ser Leu Ala Asp Lys Asp
            485   490   495

Gly Asn Gly Tyr Leu Ser Phe Arg Glu Phe Leu Asp Ile Leu Val Val
            500   505   510

Phe Met Lys Gly Ser Pro Glu Asp Lys Ser Arg Leu Met Phe Thr Met
        515   520   525

Tyr Asp Leu Asp Glu Asn Gly Phe Leu Ser Lys Asp Glu Phe Phe Thr
    530   535   540

Met Met Arg Ser Phe Ile Glu Ile Ser Asn Asn Cys Leu Ser Lys Ala
545   550   555   560

Gln Leu Ala Glu Val Val Glu Ser Met Phe Arg Glu Ser Gly Phe Gln
            565   570   575

Asp Lys Glu Glu Leu Thr Trp Glu Asp Phe His Phe Met Leu Arg Asp
        580   585   590

His Asp Ser Glu Leu Arg Phe Thr Gln Leu Cys Val Lys Gly Gly Gly
        595   600   605

Gly Gly Gly Asn Gly Ile Arg Asp Ile Phe Lys Gln Asn Ile Ser Cys
    610   615   620

Arg Val Ser Phe Ile Thr Arg Thr Pro Gly Glu Arg Ser His Pro Gln
625   630   635   640

Gly Leu Gly Pro Pro Ala Pro Glu Ala Pro Glu Leu Gly Gly Pro Gly
            645   650   655

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Leu Lys Lys Arg Phe Gly Lys Lys Ala Ala Val Pro Thr Pro Arg Leu
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Tyr Thr Glu Ala Leu Gln Glu Lys Met Gln Arg Gly Phe Leu Ala Gln
        675             680             685

Lys Leu Gln Gln Tyr Lys Arg Phe Val Glu Asn Tyr Arg Arg His Ile
    690             695             700

Val Cys Val Ala Ile Phe Ser Ala Ile Cys Val Gly Val Phe Ala Asp
705             710             715             720

Arg Ala Tyr Tyr Tyr Gly Phe Ala Leu Pro Pro Ser Asp Ile Ala Gln
            725             730             735

Thr Thr Leu Val Gly Ile Ile Leu Ser Arg Gly Thr Ala Ala Ser Val
            740             745             750

Ser Phe Met Phe Ser Tyr Ile Leu Leu Thr Met Cys Arg Asn Leu Ile
        755             760             765

Thr Phe Leu Arg Glu Thr Phe Leu Asn Arg Tyr Val Pro Phe Asp Ala
    770             775             780

Ala Val Asp Phe His Arg Trp Ile Ala Met Ala Ala Val Val Leu Ala
785             790             795             800

Ile Leu His Ser Ala Gly His Ala Val Asn Val Tyr Ile Phe Ser Val
            805             810             815

Ser Pro Leu Ser Leu Leu Ala Cys Ile Phe Pro Asn Val Phe Val Asn
        820             825             830

Asp Gly Ser Lys Leu Pro Gln Lys Phe Tyr Trp Trp Phe Phe Gln Thr
        835             840             845

Val Pro Gly Met Thr Gly Val Leu Leu Leu Leu Val Leu Ala Ile Met
    850             855             860

Tyr Val Phe Ala Ser His His Phe Arg Arg Arg Ser Phe Arg Gly Phe
865             870             875             880

Trp Leu Thr His His Leu Tyr Ile Leu Leu Tyr Ala Leu Leu Ile Ile
            885             890             895

His Gly Ser Tyr Ala Leu Ile Gln Leu Pro Thr Phe His Ile Tyr Phe
            900             905             910

Leu Val Pro Ala Ile Ile Tyr Gly Gly Asp Lys Leu Val Ser Leu Ser
        915             920             925

Arg Lys Lys Val Glu Ile Ser Val Val Lys Ala Glu Leu Leu Pro Ser
        930             935             940

Gly Val Thr Tyr Leu Gln Phe Gln Arg Pro Gln Gly Phe Glu Tyr Lys
945             950             955             960
```

```
Ser Gly Gln Trp Val Arg Ile Ala Cys Leu Ala Leu Gly Thr Thr Glu
                965             970             975

Tyr His Pro Phe Thr Leu Thr Ser Ala Pro His Glu Asp Thr Leu Ser
            980             985             990

Leu His Ile Arg Ala Val Gly Pro Trp Thr Thr Arg Leu Arg Glu Ile
        995             1000            1005

Tyr Ser Ser Pro Lys Gly Asn Gly Cys Ala Gly Tyr Pro Lys Leu Tyr
    1010            1015            1020

Leu Asp Gly Pro Phe Gly Glu Gly His Gln Glu Trp His Lys Phe Glu
1025            1030            1035            1040

Val Ser Val Leu Val Gly Gly Gly Ile Gly Val Thr Pro Phe Ala Ser
            1045            1050            1055

Ile Leu Lys Asp Leu Val Phe Lys Ser Ser Leu Gly Ser Gln Met Leu
            1060            1065            1070

Cys Lys Lys Ile Tyr Phe Ile Trp Val Thr Arg Thr Gln Arg Gln Phe
            1075            1080            1085

Glu Trp Leu Ala Asp Ile Ile Gln Glu Val Glu Glu Asn Asp His Gln
    1090            1095            1100

Asp Leu Val Ser Val His Ile Tyr Val Thr Gln Leu Ala Glu Lys Phe
1105            1110            1115            1120

Asp Leu Arg Thr Thr Met Leu Tyr Ile Cys Glu Arg His Phe Gln Lys
            1125            1130            1135

Val Leu Asn Arg Ser Leu Phe Thr Gly Leu Arg Ser Ile Thr His Phe
            1140            1145            1150

Gly Arg Pro Pro Phe Glu Pro Phe Phe Asn Ser Leu Gln Glu Val His
            1155            1160            1165

Pro Gln Val Arg Lys Ile Gly Val Phe Ser Cys Gly Pro Pro Gly Met
    1170            1175            1180

Thr Lys Asn Val Glu Lys Ala Cys Gln Leu Val Asn Arg Gln Asp Arg
1185            1190            1195            1200

Ala His Phe Met His His Tyr Glu Asn Phe
            1205            1210
```

```
<210> 693
<211> 277
<212> PRT
<213> Homo sapiens

<400> 693
Met Ala Tyr Gln Asp Leu His Ser Glu Ile Thr Ser Leu Phe Lys Asp
                5               10              15
```

```
Val Phe Gly Thr Ser Val Tyr Gly Gln Thr Val Ile Leu Thr Val Ser
            20                  25                  30

Thr Ser Leu Ser Pro Arg Ser Glu Met Arg Ala Asp Asp Lys Phe Val
            35                  40                  45

Asn Val Thr Ile Val Thr Ile Leu Ala Glu Thr Thr Ser Asp Asn Glu
            50                  55                  60

Lys Thr Val Thr Glu Lys Ile Asn Lys Ala Ile Arg Ser Ser Ser Ser
65                  70                  75                  80

Asn Phe Leu Asn Tyr Asp Leu Thr Leu Arg Cys Asp Tyr Tyr Gly Cys
                85                  90                  95

Asn Gln Thr Ala Asp Asp Cys Leu Asn Gly Leu Ala Cys Asp Cys Lys
            100                 105                 110

Ser Asp Leu Gln Arg Pro Asn Pro Gln Ser Pro Phe Cys Val Ala Ser
            115                 120                 125

Ser Leu Lys Cys Pro Asp Ala Cys Asn Ala Gln His Lys Gln Cys Leu
            130                 135                 140

Ile Lys Lys Ser Gly Gly Ala Pro Glu Cys Ala Cys Val Pro Gly Tyr
145                 150                 155                 160

Gln Glu Asp Ala Asn Gly Asn Cys Gln Lys Cys Ala Phe Gly Tyr Ser
                165                 170                 175

Gly Leu Asp Cys Lys Asp Lys Phe Gln Leu Ile Leu Thr Ile Val Gly
            180                 185                 190

Thr Ile Ala Gly Ile Val Ile Leu Ser Met Ile Ile Ala Leu Ile Val
            195                 200                 205

Thr Ala Arg Ser Asn Asn Lys Thr Lys His Ile Glu Glu Glu Asn Leu
            210                 215                 220

Ile Asp Glu Asp Phe Gln Asn Leu Lys Leu Arg Ser Thr Gly Phe Thr
225                 230                 235                 240

Asn Leu Gly Ala Glu Gly Ser Val Phe Pro Lys Val Arg Ile Thr Ala
                245                 250                 255

Ser Arg Asp Ser Gln Met Gln Asn Pro Tyr Ser Arg His Ser Ser Met
                260                 265                 270

Pro Arg Pro Asp Tyr
                275
```

<210> 694
<211> 157
<212> DNA
<213> Homo sapien

<400> 694
aaatataaat gatatgttga aaacttaagg aagcaaatgc tacatatatg caatataaaa   60
tagtaatgtg atgctgatgc tgttaaccaa agggcagaat aaataagcaa aatgccaaaa   120
ggggtcttaa ttgaaatgaa aatttaattt tgttttt   157

<210> 695
<211> 241
<212> DNA
<213> Homo sapien

<400> 695
ctggcccgac ctctggcctc ctcttccctg gctgaatgta aatatttacc agcatttaga   60
aaaaaggaga aaaaagacag aactaaaccc gtttaggaaa aagggaccga gggacagcag   120
tggttaagta atccactgag gacctgaagg ggaaaatgga cttacctttc tcatatactt   180
ggcctggcta ggacactggg tgccagacag ccttctgagg ggattttctt tctaaatgag   240
g   241

<210> 696
<211> 188
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(188)
<223> n = A,T,C or G

<400> 696
gcccatgatg ncagagctgg aagagaggnn acgtcagcag aggggccacc tccatttgnt   60
gnagacaagc atagatggga ttctggctga tgtgaagaac ttggagaaca ttagggacaa   120
cctgcccccca ggctgctaca atacccaggc tcttgagcaa cagtnaagct gccataaata   180
tttctcaa   188

<210> 697
<211> 289
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(289)
<223> n = A,T,C or G

<400> 697
ctgcttggac ttcaaagccc tccgcctagc catctcagcc aggctcaggn tccttctccc   60
acccatcagg ccaagcagga cttgtnaaac atacacattc aagttcctag cacacagtag   120
gtgctaagtg ggaattgatt ataaacttga attcttccat caacaaatat ctacctctcc   180
tgtccagctt gcctcagatc ttcaggntct ctcttctctg aggcagctaa gcttctacat   240
ccttcatgaa gtttccttta cttctcgaca gaagacagtt ccctttagg   289

<210> 698
<211> 193
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(193)

```
<223> n = A,T,C or G

<400> 698
aaagtttgtg ctataaaatt gtgcaaatat gttaaggatt gagacccacc aatgcactac      60
tgtaatattt cgcttcctaa atttcttcca cctacagata atagacaaca agtctgagaa     120
actaaggcta accaaactta gatataaatc ctaccaataa aatttttcag ntttaagttt     180
tacagtttga ttt                                                        193

<210> 699
<211> 279
<212> DNA
<213> .Homo sapien

<220>
<221> misc_feature
<222> (1)...(279)
<223> n = A,T,C or G

<400> 699
ccttcccccc ccttccttat gagttctaac ttagtaattt caaatgtgac cttttatatn      60
taagaccagt atagtaaact tagcccacag tggcaaataa tgagtaatat tgtaatatgt     120
tccagnggga taccctcctt gtcttgaatt ttggctttga cattctcaat ggtgtcactg     180
ggctcgacct caagggtgat ggttttgcca gtgagggtct tcacaaagat ctgcatgttt     240
gcgtccgcac gaccgccgcc accaaccagc tcggccgcc                            279

<210> 700
<211> 340
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(340)
<223> n = A,T,C or G

<400> 700
ctgtccaatg acaacaggac cctcactcta ctcagtgtca caaggaatga tgtaggaccc      60
tatgagtgtg gaatccagaa caaattaagt gttgaccaca gcgacccagt catcctgaat     120
gtcctctatg gcccagacga ccccaccatt tcccccctcat acacctatta ccgnccaggg     180
gtgaacctca gcctctcctg ccatgcagcc tctaacccac ctgcacagta ttcttggctg     240
attgatggga acatccagca acacacacaa gagctcttta tctccaacat cactgagaag     300
aacagcggac tctatacctg ccaggccaat aactcagcca                           340

<210> 701
<211> 277
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

<400> 701
ccactggctg agntattggc ctggcaggna tagagtccgc tgttcttctc agtgatgttg      60
gagataaaga gctcttgtgt gtgttgctgg atgttcccat caatcagcna agaatantgt     120
gcaggtgggt tagaggctgc atggcaggag aggctgaggt tcaccccctgg acggtaatag     180
gngtatgagg gggaaatggt ggggtcgtct gggccataga ggacattcag gatgactggg     240
```

203

```
tcgctgtggt caacacttaa tttgttctgg attccac                                    277
```

```
<210> 702
<211> 255
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(255)
<223> n = A,T,C or G

<400> 702
ctgcgcgtcg ccaaagtgac aggcggngcg gcctccaagc tntctaagat ccgagtcgtc        60
cggaaatcca ttgcccgtgt tctcanagtt attaaccaga ctcagaaaga aaacctcagg        120
aaattctaca agggcaagaa gtacaagccc ctggacctgc ggcctaagaa gacacgtgcc        180
atgcgccgcc ggctcaacaa gcacgaggag aacctgaaga ccaagaagca gcagcggaag        240
gagcggctgt acccg                                                         255
```

```
<210> 703
<211> 224
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(224)
<223> n = A,T,C or G

<400> 703
cctgtttgga ggngctgctc gaaagggttt gccctgagac tnnaagaaga agctgcggga        60
aggacagcag gggncctggg gttttagcnt ctggcccagg agttatgtgt ccataaccaa        120
agggagcaca gtctgcaccc agctctcatc ccatcggagc tgctgcgact cccgcaggnt        180
cttccggaac tggtttagct tgcccgcagn atcagnaaag tttg                        224
```

```
<210> 704
<211> 445
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(445)
<223> n = A,T,C or G

<400> 704
aggtaaaaag cagcctgggc aagagaagtg ggtgggttta ggagaatccc tttcgaaaaa        60
ttcagagcat tattattaat ccttcttaaa ttaaatgcag ggccaagcat gctgcacgtg        120
gaatctggac aatttttga taaactttaa ggctgctaaa taatttacag aaactgtgaa        180
tgcattttca ttttacgagg caaaagagaa aatattcaag attgcatagc aatttttattt       240
tttgaaatgg ntatcctaaa gaatttcctt aaattcagat tttgcaaaat tcctactctc        300
caagtcatca agngaacact aaaagcaact ttactcgtga atacagggga ctctttacga        360
ggcatgcatt tttcataaat ctaggccaaa gngaactaat tgagatttaa ttctaaattc        420
atcctgngat ttctgcatat aatat                                             445
```

```
<210> 705
<211> 107
<212> DNA
```

204

```
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(107)
<223> n = A,T,C or G

<400> 705
atcacccnat ttaattaaaa atccctggnc tnaggaccta cagcanngta ctgnagaact       60
tnagaacctn aattagccat ttgccatctt nagagagtct tnnccat                    107


<210> 706
<211> 113
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(113)
<223> n = A,T,C or G

<400> 706
aaatagtttc taaaggcaag gncttgctat gttgcttagg ctggttttga aaagtccctt       60
ttggggggat gctttcactg cttcacttcc tttctatgac agctnaggga atc             113


<210> 707
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 707
ctgctccaag gccatcaaga tcttcatggg gaggacggag ctgaagntgg aagacaagca       60
ccgtgtggtg atccagcgtg atgagggtca ccacgtggcc tacaccacgc gggaggtggg      120
ccagtanctg gnggnggagt ccagcacggg catcatcgnc atctgggaca agaggaccac      180
cgtgttcatc aagctggctc cctcctanaa gggcaccgtg ngnggcctgt gtgggnactt      240
tgaccaccgc tccaacaacg acttcaccac gcgggnccac atg                        283


<210> 708
<211> 341
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(341)
<223> n = A,T,C or G

<400> 708
ctgtccaatg acaacaggac cctcactcta ctcagtgtca caaggaatga tgtaggaccc       60
tatgagtgtg gaatccagaa caaattaagt gttgaccaca gcgacccagt catcctgaat      120
gtcctctatg gcccagacga ccccaccatt tccccctcat acacctatta ccgtccaggg      180
gngaacctca gcctctcctg ccatgcagcc tctaaccccac ctgcacagta ttcttggctg     240
attgatggga acatccagca acacacacaa gagctcttta tctccaacat cactgagaag      300
```

```
aacagcggac tctatacctg ccaggccaat aactcagcca g                          341
```

```
<210> 709
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 709
ccaagtccag gggcgtggag gccgcccggg agcggatgtt caatggtgag aagatcaact      60
anaccgaggg tcgagccgtg ctgcacgtgg ctctgcggaa ccggtcaaan acacnnatcc      120
tggtagacgg caaggatgtg atgccagagg tcaanaaggt tctggananag atgaagtctt.    180
tctgccagcg tgtccggagc ggngactgga aggggtanac aggcaagacc atcacggacg      240
tcatcaacat tggcattggc ggctccgacc tgggaccccct catggngact gaagcccttaa    300
agtcatactc ttcaggaggn ccccgcgnct gggatgnctc caacattgat ggaactcaca      360
ttgccaaaac cctggc                                                      376
```

```
<210> 710
<211> 232
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(232)
<223> n = A,T,C or G

<400> 710
ctgctgtata ttcagcattg tgggaggagc tgtgaaagac anagaacagt anagggtgtg      60
gnccctgccc tcgagaggnt tanagtctag gtggagaaac gggaancagg acacatgggg      120
agccgagaga aaanagtcca ggccagtatg ttacaggagc tggaaggtgt ttggggtcag      180
accccaatac tccaagtaca ctaagcactt cagtgcctcc aggggctcaa cg             232
```

```
<210> 711
<211> 317
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 711
caggtaaaat agatttaatt taggaaagct cattttatat gagtttccaa ctaattatta      60
gagtcagaaa caaagaaaat aaaatcagag aaaatcctct gtagaaaaaa tacacaaaga      120
acatttctac atgtgaaaaa acagtaaaca gtgttaacat ccaagttatt agtctcaatt      180
ccacgtctcc tagtgaacac cactatcaac cttgagatct gatttgntct tgtcattctt      240
cactgagtag atgaaatatg ttaaggtgtc tttttcattc actggaatag acctaaagtg      300
gcaaccaact atctcaa                                                     317
```

```
<210> 712
<211> 154
<212> DNA
```

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(154)
<223> n = A,T,C or G

<400> 712
tntgtagaaa aaatanacaa agaacatttn tanatgtgaa aaaacagtaa acagngttaa   60
catccaagtt attagtctca attccacgtc tcctagtgaa caccactntc aaccttgaga   120
tctgatttgn tcttgtcatt cttcactgag taga   154

<210> 713
<211> 177
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(177)
<223> n = A,T,C or G

<400> 713
ccattcagag gtagaagatg gaggggcggc agattctggc agggcagcag agggctctat   60
gcacgggttt caaacctgtt ttccacactc tgtctttgca gntttggtaa ttctgtggtc   120
tatttatana gatattaaaa tcttgtttat aaaaaaaaaa aaaaaaaaaa aaaaaaa   177

<210> 714
<211> 216
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 714
ctgtgtttcg gctataaaaa ggcggctgaa agaaggggaa aattanttta gacttaattg   60
gaagtttcat atggcacaca ttaccagnag agaaaaagat ataaacggca ataaatatta   120
ggctcgattt gagaaactct ccccacctca atgctttctt ttcccttgct atttaagggt   180
ctactttgca acccgtgtgn gtgtttgtgt gtgtgt   216

<210> 715
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 715
ctgtgcgagt gtaccggatg cttccacctc tcaccaagaa ccagagaaaa gaaagaaagt   60
cgaagtccag ccgagatgct aagagcaagg ccaagaggaa gtcatgtggg gattccagcc   120
ctgatacctt tctctgatgga ctcagcagct ccactctgcc tgatgaccac agcagctaca   180
cagttccagg ctacatgcag gacttggagg nggagcaggc cctgactcca gctacaacag   240

```
atgaggatga ggaagggaaa ttacctgagg acatcatgaa gctcttggag cagncggagt    300
ggcagccaac aagcgtggat gggaaggggt acntactcaa tgaacctgga gnccagccca    360
cctctgtcta tggaga                                                   376
```

<210> 716
<211> 96
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(96)
<223> n = A,T,C or G

<400> 716
```
aaactttta tttgcatatt aaaaaaattg tgcattccaa taattaaaat catttgaana    60
aaaaaaaat ggcnctntga ttaaactgca ttacag                              96
```

<210> 717
<211> 366
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(366)
<223> n = A,T,C or G

<400> 717
```
gatggaaagg atacagatga catcaagatc cccatgctgt tcttattcag caaagaagga    60
agtatcatac tggatgccat ccgggaatat gaggaggtag aagngctcct ctctgataaa    120
gcaaagatc gagatcctga aatggaaaat gaagaacaac catcctctga aaatgattct    180
cagaatcaga gtggtgaaca gatttcatca agttctcagg aggntgattt ggntgatcaa    240
gagtcttctg aggaaaattc tctaaattct cacccagaat cattatctct agcagatatg    300
gacaatgctg caagcatttc cccttctgaa cagacttcta atnccacaga aaaccatgag    360
actaca                                                             366
```

<210> 718
<211> 200
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(200)
<223> n = A,T,C or G

<400> 718
```
aaacatctca catatanaaa ataggtacaa tttaattttt ctgcttgccc aagaaacaaa    60
gcttctgtgg aaccatggaa gaagatgaaa atgagactgg caaagaacaa atgctgaatc    120
tgaagaagat ttgggcaaat aatctgcata cttttaattg gaataagat ggaaaatatg    180
aatgctaaat caaatttttt                                               200
```

<210> 719
<211> 336
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(336)
<223> n = A,T,C or G

<400> 719
ctgtctcaca ctttgcaagc tgtgagagac acatcagagc cctgggcact gtcactgctt   60
gcagcctgag ngtaactccc tcctttttcta tctgagctct tcctcctcca catcacggca   120
gcgaccacag ctccagtgat cacàgctcca aggagaacca ggccagcaat gatgcccacg   180
atggggatgg tgggctggga agacagctcc catctcaggg tgaggggctt gggcagaccc   240
tcatgctgca catggcaggn gtatctctgc tcctctccag aaggcaccac cacagccgcc   300
cacttctgga aggntccatc cccttgcagg ccttgg   336

<210> 720
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(167)
<223> n = A,T,C or G

<400> 720
ggagagtgct agtgaggcgg ccaagaagta natggaggag aatgannagc tcaagaaggg   60
agctgctgtt gacggaggca agttggatgt cgggaatgct gaggtgaagt tggaggaaga   120
gaacaggagc ctgaaggctg acctgcagaa gctaaaggac gagctgg   167

<210> 721
<211> 134
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(134)
<223> n = A,T,C or G

<400> 721
cctagtatga ggagcgttat ggagtggaag tgaaatcana tggctaggcc ggaggncatt   60
aggagggctg agaggġccccc tgttaggggt catgggctgg gntttacgtg cgtgaggagg   120
ggcggagctt gcag   134

<210> 722
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 722
aaaaatatat acaactatga tgttcaaata tgtattctga gccattatgt tcaaacataa   60
atatctggga aattcaaact gctgcaacaa gttaggaaag gattaaggaa aaatgatgag   120
ctacaaatta tgtagttgga ggaagaaaaa aatgttactt agcatttatg tctggatagg   180
tatgtatttt ctaatttaca tacacatatc cagntgagta tagacaacca tcaaaatgta   240

```
accagttaca  cagagactag  actaagccaa  cactattttc  tataacaggn  aacagtagng       300
atttcaaaaa  ttttaatatc  tcaatagttt  caccaaaaat  tatttatggg  aat             353
```

<210> 723
<211> 268
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(268)
<223> n = A,T,C or G

<400> 723
```
ctgagaagag  cgccaggaag  ccctgggtgc  gagagttgat  gacgtcgatc  tcgtgcaggg        60
acacggngtg  caccacctcc  ttgcgtttct  ggagctcccc  atctgggcac  tgcacgaact       120
tggnctggga  gcccatagcg  tcgtagtcgc  gggcgngtgt  gaaggagcgg  cccaacttgg       180
agatcttgcc  cgtcgccttg  tcgatggnga  tcacgtcccc  ggcctggacc  ttgtccttgg       240
ncagggactc  aatcatcttg  ntgcccag                                            268
```

<210> 724
<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 724
```
aaagaatcag  caaaatttca  aataaaaaat  tatgaaaata  ttatcctcat  tagttcattt        60
agncccatga  aattaattat  tttctctgct  cgatcttggt  ggacagtttc  atgaagctgt       120
cagttagttc  attaaagttt  tggaaattct  cagacagtgc  agtggtatca  gaaacttgta       180
ttcaagagta  naggtcagag  ncttctttc  ttttctttt  gagatggagt  cttgctctgt         240
tgccagactg  gagtgcagtg  gtgcgatctg  ggctcactgc  aatctccacc  tcccgggttc       300
aagcgattct  cctgcctcag  cctcccgagt  aactgggact  acag                        344
```

<210> 725
<211> 345
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(345)
<223> n = A,T,C or G

<400> 725
```
aaacaagaga  aagtagacag  atacatgttg  gnaaatgcta  actgtccata  ttcacataga        60
gacacagtgt  actctctgag  cccaatatan  agagaaagga  ggaaaaaagc  tagaattcta       120
tgcactacta  cacaggggcc  tagcaccctc  cagcttccag  cagagcgaag  ggagcaggnt       180
tttctttttt  cccacagagc  tcggggggtt  gattccatac  agnttttgtt  cagacaggaa       240
gggataaaaa  tgaacttcga  acagaaaggg  gtagagactc  ttttcccatt  gtattctgct       300
caaggnattt  ccccccaaat  aaattgagaa  ccatggagnn  gagaa                       345
```

<210> 726
<211> 305
```

210

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(305)
<223> n = A,T,C or G

<400> 726
ttgcctgatg tcagagcccc tccacacatg agcctgctcc ctactgccaa caccgtggcc   60
cagacagaga cgctttccga ggaagaggtg aagctcctgc agtcgctgaa gnaagganag   120
cagatcgtga ggaaaaaggg cgccgaggtt gggggcatgt ctctcttctt accaagctag   180
actgggntgc cttttctaac tattccagcc ctacagggcg aggggccata atggagtatc   240
ccgcccsttt agaccccagg cgctcaccgg cagggcaaga aggngaaatc cagcagccgc·   300
gccag   305

<210> 727
<211> 387
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(387)
<223> n = A,T,C or G

<400> 727
ccaacgaggc atcacctctg acggtgtcag tcatcgatga ccggctcaag gagaagatgg   60
tggtggagtt ccgccacatg aggaaccatg cctatgagcc actcgccagc ttcctagact   120
tcattactta nagttacatg atcgacaacg ngatcctgct catcacaggc acgctgcacc   180
agcgctccat cgctgagctc gtgcccaagt gccacccact aggcagcttc gagcagatgg   240
aggccgtgaa cattgctcag acacctgctg agctctacaa tgccattctg gtggacacgc   300
ctcttgcggc ttttttccag gactgcattt cagagcagga ccttaacgag atgaacatcg   360
agatcatccg caacaccctc tacaagg   387

<210> 728
<211> 109
<212> DNA
<213> Homo sapien

<400> 728
ctgactgaca gccagattgc agatgtggct cgcttttgta accgctaccc taatatcgaa   60
ctatcttatg aggtggtaga taaggacagc atccgcagtg gcgggccag   109

<210> 729
<211> 329
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(329)
<223> n = A,T,C or G

<400> 729
aaagcatagg actatagtca gcatgctaga ctgagaggta aacactgatg caattagaac   60
aggtactgat gctgtcagtg tttaacacta tgtttagctg tgtttatgct ataaaagtgc   120
aatattagac actagctagt actgctgcct catgtaactc caaagaaaac aggatttcat   180

211

```
taagtgcatt gaatgtggct atttctctaa gttactcata ttgtcctttg cttgaatgca        240
atgccgngca gatttatgtg gctgctattt ttattttctg ngcattactt taacacctta        300
aagngagaag caaacatttc cttcttcag                                          329
```

```
<210> 730
<211> 238
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(238)
<223> n = A,T,C or G
```

```
<400> 730
aaaaagtggc agagtgactt aactgatcat gcatgatccc tcatccctga aattgagttt         60
atgtagncat tttacttatt ttattcatta gctaactttg tctatgtata tttctagata        120
ttgattagtg taatcgatta taaaggatat ttatcaaatc caggggattgc attttgaaat       180
tataattatt ttctttgctg aagnattcat tgtaaaacat acaaaataaa catatttt          238
```

```
<210> 731
<211> 297
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(297)
<223> n = A,T,C or G
```

```
<400> 731
aaactgaatt ttttgacctt ggaaaatatt tttcttactt taccaaggtg aagtttcctt         60
aattagacta attattttat ccccatccca gggtataaac aggaattgtt ttgatagtgg        120
tggagttatt cactgcaaca aagcaacaat gttgtccatg attcaaaatc taagcagttt        180
cgattttgcc tgtgaatatg gngtctgtca ttcagggcat agctcactgt aggctagcct        240
ctgcttactt aagnctcttc tctgacatac tcaatggaag aatatttaga tttattt          297
```

```
<210> 732
<211> 370
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(370)
<223> n = A,T,C or G
```

```
<400> 732
ctgtcagtct tcctgaaatg aagaaactac accagggctg ctatatcaga gcaaccccaa         60
ccagcactcc aatcatgatg ccgacagngg ccccaattag aagntcaaaa acaaaaatta        120
agttaggtag ncagacatct ataaatacta gtatccgcat gaatgaaaac accctggctt        180
tggnatggct acagaaatcc atctggaaat tattcaaaag gacgtggttc agggaaaagg        240
gggtaggcag ggcatggggg gaggggaaca cacaaaaccc ccaagcagag gtaaaatgaa        300
tattggaaca caccgcagc aaacactgta catagacttg aggcagatgc ctctaacaca        360
acacatatac                                                              370
```

```
<210> 733
<211> 242
```

212

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(242)
<223> n = A,T,C or G

<400> 733
cctcctattt attctagcca cctctagcct agccgtttac tcaatcctct gatcagggtg   60
agcatcaaac tcaaactacg ccctgatcgg cgcactgcga gcagtagccc aagcaatctc   120
atatgaagnc accctagcca tcattctact atcaacatta ctaataagtg gctcctttaa   180
cctctccacc cttatcacaa cacaagaaca cctctgatta ctcctgccat catgaccctt   240
gg   242

<210> 734
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 734
cctttcttgt aagtgaagaa aaaggaatgc agcaaagaag agttcgacat tggagtcctt   60
agttccatca ggatcccatt cgcagccttt agcatcatgt agaagcaaac tgcacctatg   120
gctgagatag gtgcaatgac ctacaagatt ttgngttttc tagctgtcca ggaaaagcca   180
tcttcagnct tgctgacagt caaagagcaa gtgaaaccat ttccagccta aactacataa   240
aagcagccga accaatgatt aaagacctct aaggctccat aatcatcatt aaatatgccc   300
aaactcattg ngactttta ttttatatac aggattaaaa tcaacattaa atcatcttat   360
ttacatgg   368

<210> 735
<211> 308
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(308)
<223> n = A,T,C or G

<400> 735
ctgtccaata ggcgtagcta tccggacaga gcacgtttgc agaaggggga ctcttcttcc   60
aggtagctga aaggggaaga cctgacgtac tntggttagg ntaggacttg ccctcgtggn   120
ggaaactttt cttaaaaagt tataaccaac ttttctatta aaagtgggaa ttaggagaga   180
aggtaggggt tgggaatcag agagaatggc tttggnctct tgcttgtggg actagcctgg   240
cttgggacta aatgccctgc tctgaacacg aagcttagna taaactgatg gatatcccta   300
ccttgaaa   308

<210> 736
<211> 354
<212> DNA
<213> Homo sapien

<220>

213

```
<221> misc_feature
<222> (1)...(354)
<223> n = A,T,C or G

<400> 736
ccttctgcta cgtagtctac aacagaagga ttcaggcaat tacctctgcc atgcggngga        60
acatgggttc atacaaactc ttcttaaggt aaccctggaa gtcattgaca cagagcattt       120
ggaagaactt cttcataaag atgatgatgg agatggctct aagaccaaag aaatgtccaa       180
tagcatgaca cctagccaga aggtctggta cagagacttc atgcagctca tcaaccaccc       240
caatctcaac acgatggatg agttctgtga acaagtttgg aaaagggacc gaaaacaacg       300
tcggcaaagg ccaggacata ccccagggaa cagtaacaaa tggaagcact taca            354


<210> 737
<211> 198
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(198)
<223> n = A,T,C or G

<400> 737
ctgccgctgc acacgctcgt tcttctctgc ctcagtgatg cgcttctcct cattgcggnc        60
atcccggatg ccctcactag acagctccgc gctgtagccc gtgggctctg cgccctcatc       120
ctgcaagctc tcctggacat ggtagctcac cggctcgtac acggggggtg gtgggggcgg       180
gggngctgtc atcaccag                                                     198


<210> 738
<211> 228
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(228)
<223> n = A,T,C or G

<400> 738
gtgccatggc acacagcctg ggtgcacacc cagcgncctc tcttgcaggt gcaggtattg        60
cagtccacct tgatcttggc gccggaagaa tanaggtcgt tgttatggac gcaagggcat       120
tccttctcca ccacgcagcc accccggccg tcatccatca gcccgtcggg gcacacacag       180
ccactgacac actctgtgtg gnaatagccg gcggccagcg nctggcag                    228


<210> 739
<211> 378
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(378)
<223> n = A,T,C or G

<400> 739
aaaaaataca ggagtcgata gcagcagttg gtgacgagat ggcactcaga aacggcgttg        60
acgtaattta ggacgtggaa tcataagcga aacagcacac tgtttgaata aagagcgagt       120
cggnatttat atttgntttt cttttgtcat gattatttga tttttaagnt gctccagcta       180
```

214

```
aggcattttt ttgtattagn atttctatta gggaaccttt cttattaggn ggnttgtatt    240
gtctggnttc taacatgcag gtagctgttt ggcagttaaa cacgtttaga gtaatttgag    300
ttacaacgtg tgaaactgag caaaaaagca gngataagnt tgggttacca taccaaatat    360
ttgttttccc actggaaa                                                  378
```

<210> 740
<211> 200
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(200)
<223> n = A,T,C or G

<400> 740
```
ccacttgagt ggntcctggc tgcttctgtg attgttaggt cttgagagat tatggacccg    60
aggcattctg ggtaccccat caattggctg atggncttct atttgggctg cgcttcttct   120
aaaaagggga gctcaaaggt cttttttttcc cccactgcag agctaaaaaa gtccctgtac   180
gccatcttct cccagtttgg                                               200
```

<210> 741
<211> 273
<212> DNA
<213> Homo sapien

<400> 741
```
ctgcttggca tcgtaatggg ccggtggcat catgagcccc agaatcagcc ttgccaggtc    60
tccagagatc tcagacttca ggtcagtcat taagtcccgg ccaaagtgag acttgaaggt   120
ctgccggatc tgctgccgct ggacattgct gcggtgcgtg atgatatcga tgattgtgtc   180
ttcgtcagtc ccgagtccct tcatggcttt ccgcagcgct ttggcatctg cgtcagggtt   240
gaagtcattg gctgggcgca caggtccctt cag                                273
```

<210> 742
<211> 297
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(297)
<223> n = A,T,C or G

<400> 742
```
ctgcagttgc tccctttagg gttataaaat aatgacccaa atgttacatg tgttgatatt    60
ataacttgtc agttactgat gtctgtggna tcctaccctc atctctgaaa gggataatac   120
tgaataatta ttagaaaact ataaaacttc acactttgta ccattaaaac ctaaaatttt   180
aatcttgncc ttttttacta tggatcagtc ggcactcggg aacagcagca aggaaaagag   240
gcaaatttca ttcacatgtt ctgngntcat acctcttctc tacctaattg ttcattt      297
```

<210> 743
<211> 381
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(381)

215

<400> 743
ctgcacctcc acctccttga agttgaagat actattgcca tcaaagccag cagccagctc   60
tggacagtat gcctgcaggg aacctccatg ccggctcagt gacacactct ctgcagccag   120
ggtaatgaac ttgtcctcag ctacaaaagc tgtgagcttg ctgtgctca cctccagggt   180
taggtttagc agccgctttg ggggtaatgg ctcaggggca cggccttcta gctcagaagn   240
agntcctgaa gnctctagtg caagggatgg tacagtctca ggaaacacag nggctcttag   300
taggnctcgg cactgtagag nggnggnatc cccagagctg gngatgattt ggttgtcatc   360
caggaagcgg caacacgaca g   381

<210> 744
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(167)
<223> n = A,T,C or G

<400> 744
cagcgngggg ctcggagagg tgctcggatt ctcgtagctg tgccgggact taaccaccac   60
catgtcgagc aaaagaanaa agaccaagac caagaagcgc cctcagcgtg caacatccaa   120
tgtgtttgct atgtttgacc agtcacagat tcaggagttc aaagagg   167

<210> 745
<211> 96
<212> DNA
<213> Homo sapien

<400> 745
ccacaaactc ctctggctgt actccctcct gcaggagacc ggcctcactg cactcagcag   60
gctcttctcc ctgcgattca cttctgggac agtcac   96

<210> 746
<211> 391
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(391)
<223> n = A,T,C or G

<400> 746
ccattacgca gccgcttcag caaacagggc tcctcccggc ccgagggcgg gaccacagtg   60
gccgtcagca ggctgagatc cgtctctgag atgttgatgg ggatgtcggc agcagagccg   120
acctttaggt gggacatacg catggagtcg tcacctgtga cccgggcagt gaagggggctg   180
cctgggacgt gctgttcatt gtacttgact agaatgctgt agtcccccgg cagcacaggc   240
aagtaggaca cgctgcnatg tcccatcctg gttgtcagtg cagtgttgct tgttcagtat   300
ctcaagccca gaaagatgaa ttaatccttg aaggaaatga cattgagctt gtttcaaatt   360
cagcggcttt gattcagcaa gccacaacag t   391

<210> 747
<211> 408
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(408)
<223> n = A,T,C or G

<400> 747
aaagttgttt gtgccttttt attttttgttt ttaatgcttt gatatttcaa tgttagcctc   60
aatttctgaa naccataggt agaatgtaaa gcttgtctga tcgttcaaag catgaaatgg   120
atacttatat ggaaattctg ctcagataga atgacagtcc gtcaaaacag attgcttgca   180
aaggggaggc atcagtgtcc ttggcaggct gatttctagg taggaaatgt ggnagcctca   240
cttttaatga acaaatggcc tttattaaaa actgagtgac tctatatagc tgatcagttt   300
tttcacctgg aagcatttgt ttctactttg atatgactgt ttttcggaca gtttatttgt   360
tgagagngtg accaaaagtt acatgtttgc acctttctag gtgaaaat   408

<210> 748
<211> 337
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

<400> 748
ggcggagaga ggcgagcacc gggaagggga gcgngggggcc gctggaatgg gtgaatttaa   60
ggnccatcga gtacgtttct ttaattatgt tccatcagga atccgctgtg tggcttacaa   120
taaccagtca aacagattgg ctgtttcacg aacagatggc actgtggaaa tttataactt   180
gtcagcaaac tactttcagg agaaattttt cccaggtcat gagnctcggg ctacagaagc   240
tttgtgctgg gcagaaggac agcgactctt tagtgctggg ctcaatggcg agattatgga   300
gnatgattta caggcgttaa acatcaagta tgctatg   337

<210> 749
<211> 261
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 749
ccgggaggct ctgattattt acccaccaca ggtaggttgt gttctgaatc tcaggttcac   60
aggttaaggc tacagcatcc tcatcctcca cggggttgga gttgttgctg gngatgaagg   120
gtttgggtgg ctctgcatag actgtgatcg ncgtgactgt ggncctattg aggccagtgt   180
ctgagttatg ggcttggcac gtataggatc cactattatt cacagngatg ttggggataa   240
agagctcttg ggnggattgc t   261

<210> 750
<211> 150
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(150)

<223> n = A,T,C or G

<400> 750
aacgctgang acatgacatc caaagattac tactttgact cctacgcaca ctttgnnatc   60
cacgaggaga tgctgaagga cgaggtgcgc accctcactt accgcaactc catgtttcat   120
aaccggcacc tcttcaagga caaggngnng   150

<210> 751
<211> 288
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(288)
<223> n = A,T,C or G

<400> 751
aaaacttttg ttaagaaaaa ctgccagttt gtgcttttga aatgtctgtt ttgacatcat   60
agtctagtaa aattttgaca gtgcatatgt actgttacta aaagctttat atgaaattat   120
taatgtgaag nttttcattt ataattcaag gaaggatttc ctgaaaacat ttcaagggat   180
ttatgtctac atatttgtgt gtgtgtgtgt gtatatatat gtaatatgca tacacagatg   240
catatgtgta tatataatga aatttatgtt gctggnattt tgcattttt   288

<210> 752
<211> 248
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(248)
<223> n = A,T,C or G

<400> 752
ctggcactga ggattatatc catataagaa ttcaacagag aaacggcagg aagacccttá   60
ctactgtcca agggatcgct gatgattacg ataaaaagaa actagtgaag gcgtttaaga   120
aaaagtttgc ctgcaatggt .actgtaattg agcatccgga atatggagaa gtaattcagc   180
tacagggnga ccaacgcaag aacatatgcc agttcctcgt agagattgga ctggctaagg   240
acgatcag   248

<210> 753
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 753
ctgctagaaa acagggaaga tattagccaa tatggaattg ccaggttctt cactgaatat   60
tttaacagtg tatgccaggg aacacacatt ctctttcgag aattcagctt cgtccaagcc   120
accccccaca atagggnatc attttttacgg gccttctgga gatgcttccg aactgtgggc   180
aaaaatggcg atttgctgac catgaaagaa tatcactgtt tgctgcaatt actgtgtcct   240
gatttcccgc tggagctcac tcagaaagca gccaggattg tgctcatgga cgatgccatg   300
gactgcttga tgncttttttc agatttcctc tttgccttcc agatcc   346

218

```
<210> 754
<211> 100
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(100)
<223> n = A,T,C or G

<400> 754
gtgccacagg cagccctggg anataggaag ctgggagcaa ggaaagggtc ttagtcactg      60
cctcccgaag ntgcttgaaa gcactcggag aattgtgcag                            100


<210> 755
<211> 405
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(405)
<223> n = A,T,C or G

<400> 755
tgtgggccca cttcccaaat ctctggagga tctgcagctt actcataaca agatcacaaa      60
gctgggctct tttgaaggat tggtaaacct gaccttcatc catctccagc acaatcggct     120
gaaagaggat gctgtttcag ctgcttttaa aggtcttaaa tcactcgaat accttgactt     180
gagcttcaat cagatagcca gactgccttc tggnctccct gtctctcttc taactctcta     240
cttagacaac aataagatca gcaacatccc tgatgagtat ttcaagcgtt ttaatgcatt     300
gcagnatctg cgtttatctc acaacgaact ggctgatagt ggaatacctg gaaattcttt     360
caatgngnca tccctggntg agctggatct gtcctataac aagct                     405


<210> 756
<211> 306
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

<400> 756
ccttgggaaa ttacctggaa atgcgactga aatcttcctt cctgaggggt ctgggctctt      60
ggaaatcaaa ccctctcagg ttgggtggct ggacgattct cctcacactt anaatgggac     120
aaggggaacc aggaggcccc caaggggatc cctgggntcc acacgaactc ctcctaccct     180
cattgngtga cagcagccat gcctcctcct ggggatcagg atctattacc tgtgcctgga     240
gaggagggga ctcctcttct cacccgctgg nctctggaca catactgtcc aattcccctg     300
tggcag                                                                306


<210> 757
<211> 321
<212> DNA
<213> Homo sapien

<220>
```

219

```
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G

<400> 757
ctggagggag gntccctggg aggttttttgt ggattccttc tgcagngact cccctggttt    60
ctggntctgg ggacccagng tccaggcgca gncttttagc acttctcagt gtagacgttg    120
acagggntct tttcccgctt gaatcctgct gagtccccaa atctcttgac ttgtcttggn    180
tacagncacc accagagctg ctcncagntt tgacaaaagc agttgctgct gaagngatcg    240
ttttgaatcc tatcatagca ctggcaggtc ccggnaaatt cttacagtca gcaggcggac    300
ctcgtgtgag ttgaatattc c                                             321

<210> 758
<211> 278
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

<400> 758
cgctcggcaa gntctcccag gagaaagcca tgttcagttc gagcgccaag atcntgaagc    60
ccaatggcga gaagccggac gagttcgagt ccggcatctc ccaggctctt ntggagctgg    120
agatgaactc ggacctcaag gctcagctna gggagctgaa tattacggca gctaaggaaa    180
ttgaagttgg tggtggtcgg aaagctatca taatctttgn tcccgntcct caaacctgcc    240
cgggcggccg cttcgagccc tatagtgagg cgnattag                            278

<210> 759
<211> 401
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(401)
<223> n = A,T,C or G

<400> 759
gcaaactgca aaccatggtg agaaattgac gacttcacac tatggacagc ttttcccaag    60
atgtcaaaac aagactcctc atcatgataa ggctcttacc cccttttaat ttgtccttgc    120
ttatgcctgc ctctttcgct tggcaggatg atgctgtcat tagtatttca caagaagtag    180
cttcagaggg taacttaaca gagtatcaga tctatcttgt caatcccaac gttttacata    240
aaataagaga tcctttagtg cacccagnga ctgacattag cagcatcttt aacacagccg    300
ngtgttcaaa tgtacagngg nccttttcag agntggactt ctagactcac ctgttctcac    360
tccctgnttt aattcaaccc agccatgcaa tgccaaataa t                        401

<210> 760
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G
```

```
<400> 760
ccgaggtttg gatcatggga gaacagcaga aagggggttat tgagggaacc tacactgttc    60
tagctgcacc ccatgccctt ctcagaggaa agcctggcat tgattagata ctgggccaga    120
ctaatactgg cagcagagcc agtgatagta acctgcctac cagaggagcc ttccactggg    180
ttggcaattt tgatctgggc cccggacatc tggcggatct cattaatgtt ggcgccttgg    240
cgcccgatta tgcagccaat taagttattt ggaatggnga gttcatgggt ggtttgagta    300
gatgcatcca aacttgccca atagcctttc acctntggag agacct             346
```

```
<210> 761
<211> 256
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(256)
<223> n = A,T,C or G
```

```
<400> 761
gagacagact gggtgatgac gctgaatctg cagaggtgct ggtgaccaat tcccctaaag    60
catctacttg tctcctcaaa ctgtgtaaag tgccctctgt ctgccgcttt cctttaatta    120
atacttctgc ttgcttggac atacagtgtc ggagttggnc ctgaaaagtg tgataagact    180
taggnttta cacagnaaga aatgtaccag aactgctgct cagcttcctc acatacattt    240
gataggcaaa tctagc                                                    256
```

```
<210> 762
<211> 321
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G
```

```
<400> 762
tggactctgg antgatgctg gaagtagata cgaaaatgng aagaacaatg gaacagcaca    60
ctttctggag catatggctt tcaagggcac caagaagaga tcccagttag atctggaact    120
tgagattgaa aatatgggtg ctcatctcaa tgcctatacc tncagagagc agactgtata    180
ctatgccaaa gcattctcta aagacttgcc aagagctgta gaaattcttg ctgatataat    240
acaaaacagc acattgggag aagcagagat tgaacgtgag cgtggagtaa tccttagaga    300
gatgcaggaa gttgaaacca a                                             321
```

```
<210> 763
<211> 348
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(348)
<223> n = A,T,C or G
```

```
<400> 763
tgagaaaaca taaagtaacc agcagatttc aatattaaaa agaagtggtt cntcctaaaa    60
aaggtnttag atcatagagt tgggattagg gtaggggata cctattaatc tggnctggaa    120
aaaaagngtg tggagaaggg gagntgtatt gntttctcac aagaggcaaa cttcagncaa    180
acaatgaaga gatagtaggn agggagatgt gtgntagacc aaagactttc tgattgctga    240
```

```
taataacaaa tttagcagct ntctacaagt caattaaaat accattctct gagacatttt        300
cagagaggag ctaactaaca cccacccagg nggaaaaatc attctaca                     348
```

```
<210> 764
<211> 374
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = A,T,C or G

<400> 764
agcnaagaag gaagctcctg cccctcctaa agctgaagcc aaagcgaagg ctttaaagnc        60
caagaaggca gcgttgaaag gtgtccacag ccacaaaaag aagaagatcc ncacgtcacc       120
caccttccng cngccgaaga cactgcgact ccggagacag cccaaatatc ctcggaagag       180
cgctcccagg agaaacangc ttgnccacta tgctatcatc aagtttccgc tgaccactga       240
gnctgccatg aagaagatag aagacaacaa cacacttgtg ttcattgngg atgttaaagc       300
caacaagcac cagattaaac aggctgngaa gaagctgtat gacattgatg tggccaaggt       360
caacacccctg attc                                                         374
```

```
<210> 765
<211> 288
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(288)
<223> n = A,T,C or G

<400> 765
aaatacaata attctgttat tgataaaatt taaggcattt tcattgcctt ttgcagattt        60
actcataact acctaacaag gaaagaaggt ataattattt cagattggat tatttattct       120
aaaattaaat tcttcactaa tttattctaa gatgaattta atagtccatc aggaaattgg       180
nttttataaa gcttatttta tgggcataaa atacaggaaa aggtaataat aaatgccaaa       240
ccgtctcttt actttatgaa gccaaatatt tcctcagact tggtttttt                   288
```

```
<210> 766
<211> 424
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(424)
<223> n = A,T,C or G

<400> 766
ttgtggttgt gcctgagggc tctgcttccg acactcatga acaggctatc ttgcggttgc        60
aagtcaccaa tgttctgtct cagcctctga ctcaggccac tgttaaacta gaacatgcta       120
aatctgttgc ttccagagcc actgtcctcc agaagacatc cttcacccct gtagggggatg       180
tttttgaact aaatttcatg aacgtcaaat tttccagtgg ttattatgac ttccttgtcg       240
aagttgaagg tgacaaccgg tatattgcaa ataccgtaga gctcagagtc aagatctcca       300
ctgaagttgg catcacaaat gttgatcttt ccaccgngga taaggatcag agcattgcac       360
ccaaaactac ccgggtgaca tacgcagcca aagccaaggg cacattcatc gcagacagcc       420
acca                                                                     424
```

222

<210> 767
<211> 302
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(302)
<223> n = A,T,C or G

<400> 767
ggctttctca ataagcctca gctttctaag atctaacaag atagccaccg agatccttat   60
cgaaactcat tttaggcaaa tatgagtttt attgtccgtt tacttgtttc agagtttgta   120
ttgtgattat caattaccac accatctccc atgaagaaag ggaacggtga agtactaagc   180
gctagaggaa gcagccaagt cgnttagtgg aagcatgatt ggtgcccagt tagcctctgc   240
aggatgtgga aacctccttc caggggaggt tcagtgaatt gtgtaggaga ggttgtctgt   300
gg   302

<210> 768
<211> 94
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(94)
<223> n = A,T,C or G

<400> 768
ctgatctaaa agaagttact gaggaagatt tgaataatca ctttaagtct ttgggaagca   60
gnnatttgaa atnttgaggt gacagncttt taag   94

<210> 769
<211> 69
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(69)
<223> n = A,T,C or G

<400> 769
ctgcaagacg actccaaccc aacaacaacc agatgngctn cagcccagcc ggncttcagt   60
tccatattt   69

<210> 770
<211> 222
<212> DNA
<213> Homo sapien

<400> 770
ctgaacgcaa accagccact ttaattaagc taagcccctta ctagaccaat gggacttaaa   60
cccacaaaca cttagttaac agctaagcac cctaatcaac tggcttcaat ctacttctcc   120
cgccgccggg aaaaaaggcg ggagaagccc cggcaggttt gaagctgctt cttcgaattt   180
gcaattcaat atgaaaatca cctcggagct ggtaaaaaga gg   222

223

```
<210> 771
<211> 332
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(332)
<223> n = A,T,C or G

<400> 771
ctgctttccc tcctatggct cccctggaac aggagggaga gccaaggggg cggcccagcc      60
tggacagcgc ccgctcctgc ctgggtgcac acacggcggg cctgagctcc agcatctgag     120
tttgggggta tgagaaacag gggagcagaa ggagaagaaa actgcctgtg ctgcaacacg     180
tttcctcatt tattttttct ttctttttct ttttttcttt ttttggaggg agaggtccct     240
gcaaggtccc ttcccgggca gnggagggat ggaaatgccg tcacagtagt agggactgga     300
gcgtctacaa ggatggaggg gagctactca gg                                   332

<210> 772
<211> 194
<212> DNA
<213> Homo sapien

<400> 772
aaaagaaaga tcaattatat ccatgcttaa caggatcagc aggagcttta taaatgactt      60
tacagagact aataagggat ttgatctttc ttttttttgtt atcgaggctt ttgaaatgtg     120
gaacttgtgt gttctgcttt atatgttata ttcaatatct tttcagatgc agtctatatt     180
ttatgctgag tttt                                                        194

<210> 773
<211> 272
<212> DNA
<213> Homo sapien

<400> 773
ccaattgatt tgatggtaag ggagggatcg ttgacctcgt ctgttatgta aaggatgcgt      60
agggatggga gggcgatgag gactaggatg atggcgggca ggatagttca gacggtttct     120
atttcctgag cgtctgagat gttagtatta gttagttttg ttgtgagtgt taggaaaagg     180
gcatacagga ctaggaagca gataaggaaa atgattatga gggcgtgatc atgaaaggtg     240
ataagctctt ctatgatagg ggaagtagcg tc                                   272

<210> 774
<211> 314
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(314)
<223> n = A,T,C or G

<400> 774
gtgtcttgta cagttagnta tattagcagc cctctgagat gncgnatcta tcggaaggat      60
ttcaaacacc aattgcttta cctgaacaaa tggnncttac cctttgaaca gcanagngac     120
cacgnagaag gaaggaaaag ggnaaaatcg cttnagttaa actgaaatta aatgaacaat     180
aaggcaacta tataagtnac ttctagnagc attgcctgag anacaaatta ttgtttgata     240
atttncattg tgaatagnaa tccaatagat catattgctt actttgntct ttttatacta     300
tagaataata tttt                                                        314
```

```
<210> 775
<211> 207
<212> DNA
<213> Homo sapien

<400> 775
cctgacagag ctcagctcac actgggaagt gtggatgcag ggtgcccttc cctaccccag        60
tgagaaggaa gattccttac ccatcttgct tccccccag ggaagatcat catgcacgac         120
ccatttgcca tgcggccctt ttttggctac aacttcgggc actacctgga acactggctg        180
agcatggaag ggcgcaaggg ggcccag                                            207


<210> 776
<211> 196
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(196)
<223> n = A,T,C or G

<400> 776
gtgaacggag gcactgtggc cgagaagctg gactggnccc gcgagaggct tgagcagcag        60
gtacntgtga accaagtgtt tgggcaggat gagatgatcn acgtcatcgg ggtgaccaag        120
ggcaaagnct acaaaggggnn caccagtcgt tggcacacca agaagctgcc ccgcaagacc       180
caccgaggac ctcggc                                                       196


<210> 777
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 777
aaagttgaac taagattcta tcttggacaa ccagctatca ccaggctcgg taggnttgtc        60
gcctctacct ataaatcttc ccactatttt gctacataga cgggtgtgct cttttagctg        120
ttcttaggta gctcgtctgg tttcgggggt cttagctttg gctctccttg caaagttatt       180
tctagttaat tcattatgca gaaggtatag gggttagncc ttgctatatt atgcttggnt        240
ataattttc atctttccct tgcggtacta tatctattgc gccaggtttc aatttctatc        300
gcctatactt tatttgggta aatgg                                             325


<210> 778
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 778
ccaaaagaag taagacagct tgctgaagat ttcctgaaag actatattca tataaacatt        60
```

225

```
ggtgcacttg aactgagtgc aaaccacaac attcttcaga ttgtggatgt gtgtcatgac      120
gtagaaaagg atgaaaaact tattcgncta atggaagaga tcatgagtga gaaggagaat      180
aaaaccattg nttttgtgga aaccaaaaga agatgtgatg agcttacnca nanaaatgag      240
gagagatggg tggcctgcca tgggtatcca tggtgacaan agtcaacaag agcgtgactg      300
ggttctaaat gaattcaaac atggaaaagc tcctattctg attgctacag atgtggcctc      360
cagagngcta gatgtggaag atgngaaatt tgtcatcaat tatgactacc ctaactcctc      420
a                                                                      421
```

```
<210> 779
<211> 330
<212> DNA
<213> Homo sapien
```

```
<400> 779
ctgaactttc cgcttacgct gcccagagct gccaggtgta gactgagaat tcgagttttg       60
tttcttcctt ggggttgtat ctgcagcctt ttctccctgg gactccctgt ctgctgccaa      120
tggagttgaa gaactggaat gatgacacag ctcctcttct cttattttct ttgctggcct      180
ctccggtgtc tgggagcggg aggaggcttg ggctagagaa gggtgatgaa ctggggccat      240
ttctcttcca gagctgtgag atgcctcgag tggagctgta ggaactggta atggcattgc      300
ggctggagct agggatgcca cttgcgtaag                                        330
```

```
<210> 780
<211> 279
<212> DNA
<213> Homo sapien
```

```
<400> 780
gagaggtaga gttttttttcg tgatagtggt tcactggata agtggcgttg gcttgccatg       60
attgtgaggg gtaggagtca ggtagttagt attaggaggg gggttgttag ggggtcggag      120
gaaaaggttg gggaacagct aaataggttg ttgttgattt ggttaaaaaa tagtagaggg      180
atgatgctaa taattaggct gtgggtggtt gtgttgattc aaattatgtg ttttttggaa      240
agtcatgtca gtggtagtaa tataattgtt gggacgatt                             279
```

```
<210> 781
<211> 323
<212> DNA
<213> Homo sapien
```

```
<400> 781
ttgatcttct gcaggaaggt gcagcttttc catatcagct caaccacgcc gccagtccat       60
tcttaaggaa ctgccgacta ggactgatga tgcatttttag ctttgagctt ttggggggtta      120
ttctaccaac aaacagtcca ttggaaagaa aacagtccct ggaattaaca gattagaatg      180
ttcacactgg ttaatctttt tttaacaatg agcatgaagg tagcagaagc tggtgtgttt      240
ccagatggtt cttctaacca aactaatttt tcactgttga caagcgaggc aagggttgca      300
ctggaccaaa ggctgaggct tgg                                              323
```

```
<210> 782
<211> 264
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G
```

```
<400> 782
ttctagcttt gccctcactc cccggaaaaa ctgacactga cacaggngct ctttccttgc       60
```

```
ccctttagnt ggtacctcag tggggaggct tccttaccaa gaatgagttc ctgaaaccca    120
gggccagaga caaggacaac ttaggggaag acggggtttt cggtggagcc aggggcaaat    180
cttaatggga ccagngggggg ataccccaga gcccatggcc tgactgcaca gcctgcctgg    240
aggatgggtg cgcagttctg cnct                                           264
```

<210> 783
<211> 159
<212> DNA
<213> Homo sapien

<400> 783
```
ctgtgtgaag gcgacagtgg tgcaggtctt cctgtggact agacgtccca gtcttgcctt    60
tcccttgata atgcagtaag ggaccccat tttacgacac agggcaggca agaagacaac     120
cagctcgatg ggatccacgt cgtgtgcaat caccaccag                           159
```

<210> 784
<211> 128
<212> DNA
<213> Homo sapien

<400> 784
```
ctcggccctc ttacaccatt ttgtttgatt gtctagtccc tgtttctttt tctttctaat    60
ccttattcat ttaagcaaaa ccatacatta tcttttccag tcctttcttg tattcttact    120
gttttttt                                                             128
```

<210> 785
<211> 346
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(346)
<223> n = A,T,C or G

<400> 785
```
ctgggctgat gctggaactc gtagaagtac acaggggccc gggaacactg aaaatgtgct    60
acttggagtg cagggatcac aaacatggag tccgccatca tctcctggaa ctgcgcttgg    120
agggtctggg gatccccatt gnccccaatg tactcctccc tcagcaggtc accaaatgta    180
ggaggcaaca tcagcagcgt taacattttc tgcagagcag cctgggaggc ctctctgtcc    240
atttccttct gggtatcata gatcctcatg accttgggga tgagccagcc gaattcattg    300
ttgttgacac caacaatgct agngnacagn ctgaaagtcg gcagag                   346
```

<210> 786
<211> 118
<212> DNA
<213> Homo sapien

<400> 786
```
ctgcactgat ctgtggggag agttttacag acttttcatt ccagcctcct ccattgacag    60
tgaggtcttc attcaatcct gaagaaacct gaagtgtaga atctcctttt ccagattt      118
```

<210> 787
<211> 257
<212> DNA
<213> Homo sapien

<400> 787

```
cactcattca tcgacctccc cacccatcc aacatctccg catgatgaaa cttcggctca    60
ctccttggcg cctgcctgat cctccaaatc accacaggac tattcctagc catgcactac    120
tcaccagacg cctcaaccgc cttttcatca atcgcccaca tcactcgaga cgtaaattat    180
ggctgaatca tccgctacct tcacgccaat ggcgcctcaa tattctttat ctgcctcttc    240
ctacacatcg ggcgagg                                                   257
```

<210> 788
<211> 155
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(155)
<223> n = A,T,C or G

<400> 788
```
cgcaagagcc tatgnatgtg gnatccagaa ctcngtgngc gcaanccgca gagacccagt    60
caccctggnt gtnctctatg ggccggacac ccccatcatt tcccccccag actcgtctta    120
cctttcngga gcgaacctca acctctcctg ccact                               155
```

<210> 789
<211> 382
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(382)
<223> n = A,T,C or G

<400> 789
```
cctaagtaaa tgaagagctg taccatattc atgtattgga agacaacatt gtaaagatga    60
catggtttac cagattaatc tataaattca atacaaatcc aatcaaaatt tcaatgctct    120
tgggtttgtt tgatttataa attgttggtc taattctaga agtaatatgg aggaacagtt    180
ggctaagaat agccaagaca ctncaaggaa gaacaatttt gtggngatac tggagacaga    240
ggtgaaattg gttacaatta tgacaaaatg tggaggcatc ttggtttta tcagaccttt    300
tcctaaagtt gcaataatca ggactgtact gtactgctac aagattagac aaattgatgt    360
cagtcagaat agaaatcatc aa                                              382
```

<210> 790
<211> 273
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(273)
<223> n = A,T,C or G

<400> 790
```
ggatccgcta cacagtttct gccagtccct gagttgatgc cttttcggct aactcgccag    60
nttatcaatc tgatgttacc aatgaaagaa acggtnctta tgtacagnat catggtacac    120
gcactccgnn ccttccgctc agaccctggc ctgctcacca acaccatgga tgtgtttgtc    180
aagnagccct cctttgattg gaaaaatttt gaacanaaaa tgctgaaaaa aggagggtca    240
tggattcaag aaataaatgt tgctgaaaaa aat                                  273
```

<210> 791

228

```
<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 791
aaagaatcag caaaatttca aataaaaaat tatgaaaata ttatcctcat tagttcattt        60
agtcccatga aattaattat tttctctgct tgatcttggn ggacagtttc atgaagctgt       120
cagttagttc attaaagttt tggaaattct cagacagtgc agtggtatca gaaacttgta       180
ttcaagagta caggtcagag ccttcttttc ttttcttttt gagatggagt cttgctctgt       240
tgccagactg gagtgcagtg gtgcgatctg ggctcactgc aatctccacc tcccgggttc       300
aagcgattct cctgcctcag cctcccgagt aactgggact acag                       344


<210> 792
<211> 227
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(227)
<223> n = A,T,C or G

<400> 792
gacaaacctg aaattgaaga tgttggttct gatgaggaag aagaaaagaa ggatggtgac        60
aagaagaaga agaagattaa ggaaaagtac atcgatnaag aagagctcaa caaaacaaag       120
cccatctgga ccagaaatcc cgacgatatt actaatgagg agtacggaga attctataag       180
agcttgacca atgactggga agatcacttg gcagngaagc attttttc                    227


<210> 793
<211> 328
<212> DNA
<213> Homo sapien

<400> 793
aaacaagtca ttttttcttga tcgttgtgga aggtttggag ccttagaggt atgtcagaaa       60
aaatatgttg gtattctccc ttgggtaggg ggaaatgacc tttttacaag agagtgaaat      120
ttaggtcagg gaaaagacca agggccagca ttgctacttt tgtgtgtgtg tgtgggtttt      180
gttttgtttt tttggttggc cggttgtttt cgttgttgtt aacaaaggaa tgagaatatg      240
taatacttaa ataaacatga ccacgaagaa tgctgttctg atttactaga gaatgttccc      300
aatttgaatt tagggtgatt ttacctgc                                         328


<210> 794
<211> 290
<212> DNA
<213> Homo sapien

<400> 794
ccagcgagca catgaagcgg ttcttcatga actttgtggt tgggcaggat ccgggctcag        60
acgccgcctt ccacttcaat ccgcggtttg acggctggga caaggtggtc ttcaacacgt       120
tgcagggcgg gaagtggggc agcgaggaga ggaagaggag catgcccttc aaaaagggtg      180
ccgcctttga gctggtcttc atagtcctgg ctgagcacta caaggtggtg gtaaatggaa      240
atcccttcta tgagtacggg caccggcttc ccctacagat ggtcacccac                  290
```

```
<210> 795
<211> 343
<212> DNA
<213> Homo sapien

<400> 795
aaaatcaaag aaatccttgt tttgaaaatt ggatcttaat ctcaaaattg tagaacttgg      60
ctgagaccat tgctttcatt ttgaaaatga acttcaactc cagaaagacc agtgtgtgct     120
ctgccaaata aatttctgag tcacagtctc actaggaatg tgcaaatcaa agcatatgtt     180
ggtgtaaatt cttttgaagt ccttgccaag ataatcaatg gcatttacat ttgctttttt     240
ctttaataaa aattccacca ttttcacttt tcttcgactc acagcaagta acagtggctg     300
atattcattc ttgctgcatt cttcaatatt tgtaccatgt gaa                       343

<210> 796
<211> 354
<212> DNA
<213> Homo sapien

<400> 796
tggcgggccg ctgaataagc ttccaaaatg atgcccacac cagttattct attgaaagag      60
gggactgata gctcccaagg catcccccag cttgtgagta acatcagtgc ctgccaggtg     120
attgctgagg ctgtaagaac taccctgggt ccccgtggca tggacaagct tattgtagat     180
ggcagaggca aagcaacaat ttctaatgat ggggccacaa ttctgaaact tcttgatgtt     240
gtccatcctg cagcaaagac tttggtagac attgccaaat cccaagatgc tgaggtgggt     300
gatggcacca cctcagtgac cttgctggct gcagagtttc tgaagcagac ctgc           354

<210> 797
<211> 309
<212> DNA
<213> Homo sapien

<400> 797
ctgtgccgtc tgcctgagcc catggatgct ttctcaatcc taggctggtt actgtgtaag      60
cgttttggag tacggggcct tgagcgggtg ggagctgtgt gttgaagtac agagggaggt     120
tggggtgggt cagagccgag ttaagagatt ttctttgttg ctggacccct tcttgaaggt     180
agacgtcccc cacccggaga cgtcgcgc tgtggcctga agtggcgcaa gcttgctttg       240
taaatatctg tggtcccgat gtagtgccca gaacgtttgt gcgaggcagc tctgcgcccg     300
ggttccagc                                                             309

<210> 798
<211> 315
<212> DNA
<213> Homo sapien

<400> 798
ccaccagcat tgacgttctt gccatccaga agagctgaca gtgtcagttt aatacctggc      60
tttagagtct gagtgtatcc taaacctatc aggctggagt tgttcacttt agccgagaag     120
caggcgtcag ggtcaatctg atacttggct gctattccga agcgcgtgtt actgtttcct     180
gctgtccagg caagattgac agcggtctcc aacttcttgt tcactttctg gtaaatggag     240
ccgccaaact ctgtcccgtc attcacatta gtgtgaagct ggaattcatc agtcttgtag     300
ccaactgcaa agttg                                                      315

<210> 799
<211> 157
<212> DNA
<213> Homo sapien

<400> 799
```

230

```
ctgtgatttc ctccatagtt ggcttctggg tcaggccata ggcaatattt tcttgaagac    60
ttcttccaaa tacctgtggc tcttgtccca ctgcagccac ctgcctgtgc aggtagcggt    120
gctcatattg gggaaggggc ttcccatcca acagcag                             157
```

```
<210> 800
<211> 357
<212> DNA
<213> Homo sapien
```

```
<400> 800
aaactcagtg aacccaaacc tattttttc aatctgaata ttgctgcagc aaaaccaact     60
ccaccaaaaa gccgggtaac attaacaaaa gaattccctg tatcatctgg atctcaacat    120
cggaaaaaag aagcggatag tgtttatgga gaatgggttc ctgtcgagaa aaatggtgaa    180
gaaaacaaag atgatgataa tgttttcagc agcaatttgc cctcagagcc tgtggacatc    240
tctacagcaa tgagtgaacg ggcacttgct cagaaaagac tcagtgagaa tgcatttgat    300
cttgaagcca tgagcatgtt aaatagagct caggaaagga ttgatgcctg ggctcag      357
```

```
<210> 801
<211> 359
<212> DNA
<213> Homo sapien
```

```
<400> 801
cctaggggggc atatcaaggg tttaatagac tgggggaatg ggcaacagaa ctggctacct    60
tagaggctct ggaatgcccc ccacccatcc acccaccaat ggaaggaaag tcaggcatcg    120
cctaaaagga gtggtcccta tctagcccca agtctggagc agaaagggca ggtccattct    180
ggcccaagtg acattgttag atcctgtccc ctcccccaat cactgctgct tgccagggtg    240
cctcttcaca gttcccatgt ggcagcagta gtggcagagg cagaagtgga cttattgtag    300
attgcagtac agatacatgg acacaatcat ggcagccagc tcgaggcccc caattccag    359
```

```
<210> 802
<211> 207
<212> DNA
<213> Homo sapien
```

```
<400> 802
ccaggctcgg gcaccacctc aatcacatcc atgatcaaga tccgccctcg gcacgtgacc     60
tcctcccccct gcatgaggca ggtcccggcg gccacgtagc ctttgaggcc cgacacggtc    120
tcctcactgc gcagagacac tgtcttcatg caggtcacat gctcccactc ctgcagctcg    180
atcctggcat tgggaatagc ctcccag                                         207
```

```
<210> 803
<211> 311
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(311)
<223> n = A,T,C or G
```

```
<400> 803
cctatttcac tgctgtgtag cctcagtgcc taacatgggt gccaaataaa tattcgtaga     60
attacactga attgtaaaaa ccattcgntt ttgnttacaa ttgccaaaaa tctcaaaagg    120
ccctgtattt atgtaattct ttgaaattat tattttattt tgatttctca gttattgact    180
ggctgggngt gacttagtac ataagtactc aatattatna aaacctcaaa taattgactt    240
gattttacac aacatccttc ccttttctac aagntaattt ttttacaaat catttggggtt   300
atctcctaaa t                                                          311
```

<210> 804
<211> 202
<212> DNA
<213> Homo sapien

<400> 804
ctgttcggat ttaacttcat cttctggctt gccgggattg ctgtccttgc cattggacta   60
tggctccgat tcgactctca gaccaagagc atcttcgagc aagaaactaa taataataat   120
tccagcttct acacaggagt ctatattctg atcggagccg gcgccctcat gatgctggtg   180
ggcttcctgg gctgctgcgg gg   202

<210> 805
<211> 238
<212> DNA
<213> Homo sapien

<400> 805
ccaaccagtc tggctggagt gatgcattcc tggcccagca cacgatgctt accctggatc   60
ccaacgtcac cggtgtcttc ctgggaccct accccttggg catcgatcct atttggagcc   120
tggctgccaa ccacttgagc ttcctcaact ccttcaagat gaagatgtcc gtcatcctgg   180
gcgtcgtgca catggccttt ggggtggtcc tcggagtctt caaccacgtg cactttgg   238

<210> 806
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 806
cctgaggtct gcggaaggtg ggaggaggca gacgccctgc gtggcccatg gtcggggcgt   60
ccacgccgag gccggcaaca aacgacagta tctcggattc cttttttttt taatttttta   120
tactttggng tttcacttcg ngctctgaat actgaataac catgaatgac tgaatagttt   180
agtccagatt tttacagagg atacatctat ttttatcatt atttggggtt tgaaaaattt   240
ttttttacac cttctaattt ctttatttct caaagcagat aattcttctg ngtgaaaatg   300
ttttcttttt ttaatttaag gttta   325

<210> 807
<211> 289
<212> DNA
<213> Homo sapien

<400> 807
cctaaaggga actgtcttct gtcgagaagt aaaggaaact tcatgaagga tgtagaagct   60
tagctgcctc agagaagaga gaacctgaag atctgaggca agctggacag gagaggtaga   120
tatttgttga tggaagaatt caagtttata atcaattccc acttagcacc tactgtgtgc   180
taggaacttg aatgtgtatg tttgacaagt cctgcttggc ctgatgggtg ggagaaggaa   240
cctgagcctg gctgagatgg ctaggcggag ggctttgaag tccaagcag   289

<210> 808
<211> 376
<212> DNA
<213> Homo sapien

```
<400> 808
aaacttaatt aaagagcttg acaagctctg catattcatg tgtcataagc agtatgtgac     60
aaaaaaaact gtgcagtatg taccccctca cgaaatttag tttggcaggg aaaacaagat    120
gcacatgtta ttataaatta gaaaatggaa gagaagtaga aataaatcca tgagtattat    180
atataagtaa cagaacaaaa acaacaggat aatgtatccc ccccaaaggc ccagtagaga    240
ccatcaaagc tcattctggg ggtagtcaag gagggagtgg agggagaaaa agaacgcaga    300
ccttcaacca ctaatgaaag aactgaaaca tctgtatgta gaaaaaaggt aaaatcaact    360
cactatcatc ttcagc                                                    376


<210> 809
<211> 243
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(243)
<223> n = A,T,C or G


<400> 809
ccatctcatt ttcaaagtnc agagctacat aacacagttt ctccttgatg tcccggacaa     60
tctcacgctc agcagtagta acgaaggaat agccacgctc agtcaggatc ttcatgaggt    120
agtcagtgag atctcggcca gccagatcca gacgcatgat gncatggggc aagnnatagc    180
cntcatagat ggngacantg tgggtgacac catctccaga gtccagcacg atgccagttg    240
tgc                                                                  243


<210> 810
<211> 274
<212> DNA
<213> Homo sapien


<400> 810
aaaaaacacg tttgttatta ccaaaaagag acgtctttag gtaaaaataa taaaaacccc     60
atgctgcatt gataatgcag atagttctat ttatctggtc aacgggcaaa aagcaagcac    120
tttaggtctt cagctccaat cttttgttca tttcttattg ctggaatttc atatttcttc    180
ttgttggatg actaaaccgg atgatggtag agatggtaag ccggcattta ctcagccccg    240
ccctgctcag cctcgggagc ggacgaattc tcag                                274


<210> 811
<211> 205
<212> DNA
<213> Homo sapien


<400> 811
ctggtggaga tcatcaaggt gctgggaaca ccaacccggg aacaaatccg agagatgaac     60
cccaactaca cggagttcaa gttccctcag attaaagctc acccctggac aaaggtgttc    120
aaatctcgaa cgccgccaga ggccatcgcg ctctgctcta gcctgctgga gtacacccca    180
tcctcaaggc tctccccact agagg                                          205


<210> 812
<211> 199
<212> DNA
<213> Homo sapien


<400> 812
aaatattgct gctgctttgt agatgatgag aagaaatgtt aaagtgcttt ctaaaaggaa     60
atttttttcac ctttggagga gaatatatta gagttgtggg taattttttca cagccaccta    120
tgtacatact aattacccat tggatactta tatctaaaag tctcatgctg aagtatagtt    180
```

233

```
tttgggaaag aatgatttt                                                    199


<210> 813
<211> 334
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(334)
<223> n = A,T,C or G

<400> 813
cctcaccgcc gatgcaagga tagtcatcaa cagggcccgn gtggagtgcc agagccaccg      60
gctgactgtg gaggacccgg tcactgtgga gtacatcacc cgctacatcg ccagtctgaa     '120
gcagcgttat acgcagagca atgggcgcag gccgtttggc atctctgccc tcatcgtggg      180
tttcgacttt gatggcactc ctaggctcta tcagactgac ccctcgggca cataccatgc      240
ctggaaggcc aatgccatag gccgggggtgc caagtcagtg cgtgagttcc tggagaagaa      300
ctatactgac gaagccattg ctctgcgacc tgcc                                   334


<210> 814
<211> 358
<212> DNA
<213> Homo sapien

<400> 814
ctgaagcttg gaacttctgg acaagaaaag gcctggtttc tggtggcctc tatgaatccc      60
atgtagggtg cagaccgtac tccatccctc cctgtgagca ccacgtcaac ggctcccggc     120
ccccatgcac gggggaggga gataccccca agtgtagcaa gatctgtgag cctggctaca     180
gcccgaccta caaacaggac aagcactacg gatacaattc ctacagcgtc tccaatagcg     240
agaaggacat catggccgag atctacaaaa acggccccgt ggagggagct ttctctgtgt     300
attcggactt cctgctctac aagtcaggag tgtaccaaca cgtcaccgga gagatgat       358


<210> 815
<211> 203
<212> DNA
<213> Homo sapien

<400> 815
ctggaagccg gactcagcca gggtgcgcta ctaccagagc ctgcaggctc atctcaaggt      60
ggacgtgtac agacgctccc acaagcctct gcccaagggg accatgatgg agacgctgtc     120
ccggtacaag ttctacctgg ccttcgagaa ctccttgcac cccgactaca tcaccgagaa     180
gctgtggagg aacgccctgg agg                                              203


<210> 816
<211> 92
<212> DNA
<213> Homo sapien

<400> 816
cggccgcaga agcgagatga cgaagggaac gtcatcgttt ggaaagcgtc gcaataagac      60
gcacacgttg tgccgccgct gtggctctaa gg                                    92


<210> 817
<211> 367
<212> DNA
<213> Homo sapien
```

```
<400> 817
ttggaggact atttgaattt tgcaaactat ctcttgtggg tttttacacc actaatactt    60
ttaatacttc cttactttac tatctttctt ctctacctta ctattatttt cttacacatt   120
tataagagaa agaatgtatt gaaagaagcc tactctcata atttatggga tggtgcaagg   180
aaaacagtgg caactctgtg ggatggacat gcagccgttt ggcatggtta tgaagttcat   240
ggaatggaaa aaataccaga agatggacca gcacttataa ttttttatca tggagctatt   300
cctatagatt tttactattt catggctaaa atatttatac acaaaggcag aacttgccga   360
gtagtag                                                             367
```

```
<210> 818
<211> 381
<212> DNA
<213> Homo sapien
```

```
<400> 818
aaataaaagt attacgtaac tttgaaattt gtataaaatt aaaagatagt aaaaacaact    60
attctaacag aattcaaaac ctgttatgct tcagtggaga gattattcaa gataagtccg   120
tgggaaattg ggagtacatt tctactggca aagttagtga taactatgca cttctgacaa   180
aatgtgaaat ggggggtatg ggcgtgtcat atcatcatgg tgcagatacg tggatgtgtg   240
cttccaaaca atggcaacct aactgactgc tggaaccata caaaatacct gaaactactc   300
agaaagaagg tgaaaattgc atgcaaaaat tatttgaaaa atattgagct aacacaacat   360
gaatttggaa ttataagtga g                                             381
```

```
<210> 819
<211> 109
<212> DNA
<213> Homo sapien
```

```
<400> 819
ccatggccgc ttccagacca tggaggagaa gaaagcattc atgggaccac tgaagaaaga    60
ccgaattgca aaggaagaag gagcttaatg ccaggaacag attttgcag               109
```

```
<210> 820
<211> 309
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(309)
<223> n = A,T,C or G
```

```
<400> 820
ctggaaaaac ctttcagcga accatttcag ctcaggacac gttagcgtat gccacagctt    60
tgttgaatga aaaagagcaa tcaggaagca gtaatgggtc ggagagtagn cctgccaatg   120
agaacggaga cagncatcta cagcagggtt cagaatctcc catnatgatt ggtgagttga   180
gaagngacct tgatgatgtt gatccctaga ggaacatgcc cagcctgaga ggagncaaga   240
cacaatactg gatgctcagc accttctttg gaatcagaat ctcgaaccct ntggaagagc   300
ctgnagatt                                                           309
```

```
<210> 821
<211> 236
<212> DNA
<213> Homo sapien
```

```
<400> 821
catccgcttc ctgaatgctg agaatgcaca gaaattcaaa acaaagtttg aagaatgcag    60
gaaagagatc gaagagagag aaaagaaagc aggatcaggc aaaaatgatc atgccgaaaa   120
```

235

```
agtggcggaa aagctagaag ctctctcggt gaaggaggag accaaggagg atgctgagga          180
gaagcaataa atcgtcttat tttattttct tttcctctct ttcctttcct tttttt             236
```

```
<210> 822
<211> 388
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(388)
<223> n = A,T,C or G

<400> 822
gcgaggcaag atggagttag tgcaggtcct gaaacgcggg ctgcagcaga tcaccggcca          60
cggcggtctc cgaggctatc tacgggtttt tttcaggaca aatgatgcga aggttgntac          120
attagtgggg gaagacaaat atggaaacaa atactatgaa gacaacaagc aattttttgg          180
ccgtcaccga tgggttgtat atactactga aatgaatggc aaaaacacat tctgggatgt          240
ggatggaagc atggtgcctc ctgaatggca tcgttggctt cacagtatga ctgatgatcc          300
tccaacaaca aaaccactta ctgctcgtaa attcatttgg acgaaccata aattcaacgn          360
gactggcacc ccagaacaat atgtacct                                            388
```

```
<210> 823
<211> 353
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(353)
<223> n = A,T,C or G

<400> 823
aaaagtttgg atctttttct cagcaggtat cagttgtaaa taatgaatta ggggccaaaa          60
tgcaaaacga aaaatgaagc agctacatgt agttagtaat ttctagtttg aactgtaatt          120
gaatattgtg gcttcatatg tattatttta tattgtactt ttttcattat tgatggnttg          180
gactttaata agagaaattc catagttttt aatatcccag aagtgagaca atttgaacag          240
tgtattctag aaaacaatac actaactgaa cagaagtgaa tgcttatata tattatnata          300
gccttaaacc ttttttcctct aatgccttaa ctgtcaaata attataacct ttt              353
```

```
<210> 824
<211> 264
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(264)
<223> n = A,T,C or G

<400> 824
ctgggtgcag gcgggctgag tccgaaaaga gagtcagcaa agggagatgg ggtggggccg          60
ttttatagga ttagggaagg taatggaaaa ttacagtcaa aggggtttg ttctctggtg          120
ggcaggtgtg gatctcacaa agtacactct caagggtggg gagaattaca aaggaccttc          180
ttaagngtgg gggagattac aaagtacatt tatcagttag ggnggngcag gaacaaatca          240
caatgttgna atgtcatcag ttaa                                                264
```

```
<210> 825
```

236

```
<211> 361
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(361)
<223> n = A,T,C or G

<400> 825
aaaatccagt ttgttgttaa caaaacctac tgctgggtgg ttttgaatat attactttta    60
ggcatgatct ccccaatgtg tttttactcc ttttccggct tctaggacag aggtatgtag   120
tcaaagaatc ctatggtgga tctgaattgg gtttcagcta ctgtacctgg tccttgtgaa   180
ttaaaaaaat aaagtcacaa aaaccatatn acaaaacaaa ttaaaataaa tagacaaaat   240
gaagctgtct ccagaccttc tgcattgaca cacaggtttg aagtcaacca aagcactcat   300
gctaatctgg atgggaacac tagggagaca gaaaccccag tatgaaacca tgtacttgag   360
c                                                                   361

<210> 826
<211> 195
<212> DNA
<213> Homo sapien

<220> .
<221> misc_feature
<222> (1)...(195)
<223> n = A,T,C or G

<400> 826
ccccagaagn gacgcagccc tctatnggcc cnaatcttct tcantcgctc caggtcttca    60
cggagcttgt tgtccagacc attggctagg acctggctgt attttccatc ctttacatcc   120
ttctgtctgt tcaagaacca gtctgggatc ttgtactggc gnggattctg cataatggng   180
atcacacgtt ccacc                                                    195

<210> 827
<211> 227
<212> DNA
<213> Homo sapien

<400> 827
caacggctct tcacagacca cctcctttc taaggaaaat ggctggtatg acgtgatgag    60
tgatacatat tttgattcag gttttgtctc taaagtagca cttcttacca cagagatcaa   120
ggacttgggt aatattatgc ttttttcctt caatggatta attttcttaa tataaaaaca   180
gatgaatacc aggctaagca ctagaaagag tagtaaagca gcaacaa                 227

<210> 828
<211> 242
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(242)
<223> n = A,T,C or G

<400> 828
atgtccgggg agtcagccag gagcttgggg aagggaagcg cgcccccggg gccggtcccg    60
gaggntcgat ccgcatctac agcatgaggt tctgcccgtt tgctgagagg acgcgtctag   120
```

```
tcctgaaggc caagggaatc aggcatgaag tcatcaatat caacctgaaa aataagcctg    180
agtggttctt taagaaaaat ccctttggtc tggngccagt tntggaaaac agtcagggtc    240
ag                                                                   242
```

<210> 829
<211> 374
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = A,T,C or G

<400> 829
```
gaggtcctga aaaggaatac acttccatat catgccatct cttacactgg cattccttgc    60
ctatgcatgt gcatggcttg ccctggttta gcttggaaac tgattgaaag tcagagagat    120
cactggcttt gagacttgct tgggggactt gggtagcgtc agaggagtct tccttcttac    180
tctctgatgg gagccttgga acagaagttc tcaaaggctc aacgactgcc cctgcgtgat    240
tagcatcgag agaagtagag ctttctcctg cactgaactc tttaggggat gaaattccca    300
gcccactgct gccatcaggt gagtcagtct ggcttttgng cttgagttga ctgctggaag    360
aagacgctat tgta                                                      374
```

<210> 830
<211> 325
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(325)
<223> n = A,T,C or G

<400> 830
```
gttcaaagca gaaaatcctg agcctctagt gtttggtgtg aagtacaatg caagttcttt    60
tgccaagttc acgcttattg tgacagatgt gaatgaagca cctcaattct cccaacacgt    120
attccaagcg aaagtcagtg aggatgtagc tataggcact aaagtgggca atgtgactgc    180
caaggatcca gaaggtctgg acataagtta ttcactgagg ggagacacaa gaggttggnt    240
taaaattgac cacgtgactg gtgagatctt tagtgtggct ccattggaca gagaagccgg    300
aagtccatat cgngtacaag tggtg                                          325
```

<210> 831
<211> 85
<212> DNA
<213> Homo sapien

<400> 831
```
tggtaccggg cccccccct gagcgatgga gcgtgggtag ggagggtcca cagtgtccac     60
tcgccgtgtg cgaaggttga ctcgg                                          85
```

<210> 832
<211> 202
<212> DNA
<213> Homo sapien

<400> 832
```
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt    60
tgtggcccct gagggtgcca cgaagggtca tctgctcagt catggcggcg cgagagcgt    120
```

238

```
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc     180
tcctgccgtc gacgcggccg cg                                               202
```

<210> 833
<211> 503
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(503)
<223> n = A,T,C or G

<400> 833
```
ccggctggtc ctgcatcgcc atctgctggc cgcgcggcac ggccggttcc tggagccagc     60
aggagtcgga ggctgcaggg cttgaaggcc tcttcaccgt gccctccagg gagcctagct     120
gccgaagtat tcctgctgga acttctggaa gtcttcctcg gtgaacacgg tgccctcagc     180
cttcttcttc ttggtcttgg ccacaggccg gtcacaggcc ttgcggcccc ggttctggcg     240
caaaatctgc tggctcacag actcagccac ggtgcttctc gtcctggtca gaaacttcag     300
gtttactctg aggtggtctc gacactctcg cttccggtac tcgtccagtg ccgacttggg     360
cacctttccc ttggccgagt ccgcagtttt ctgggcctga attgccttcg tcttccgggg     420
ccgtttcacc ggancccctc tcggcttggc ctgacctgga gggtcccggg gggcctngga     480
cgccgccagc agctncaggc ccc                                             503
```

<210> 834
<211> 208
<212> DNA
<213> Homo sapien

<400> 834
```
atccagagac aatctgccgg ttgtcagagg agaaggccac actcagcaca tccttggtat     60
ggcccacaaa tcgcctcgtg gtggtgcccg ttgtgagatc ccagaggcgc agggttccat     120
cccaggagcc tgagagggca aactggccat ctgaggagat aaccacatca ctaacaaagt     180
gggagtgacc ccgcagagca cgctgtgg                                        208
```

<210> 835
<211> 210
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(210)
<223> n = A,T,C or G

<400> 835
```
tgatgtgggc gattgatgaa aaggcggttg aggcgtctgg tgagtagtgc atggctagga     60
atagtcctgt ggtgatttgg aggatcangc aggcgccaag gagtgagccg aagtttcatc     120
atgcggagat gttggatggg gtggggaggt cgatgaatga gtggttaatt aattttatta     180
gggggttaat tttgcggtcg acgcggccgc                                      210
```

<210> 836
<211> 426
<212> DNA
<213> Homo sapien

<400> 836
```
cggccgccac gctggttttg catcttcagg agacgctcgt agccctcgcg cttctcctcg     60
```

```
gccaattcgc ggaagaagtg gctcacgcct tccagagcca catcatcgcg gtcgaaatag        120
aagcccagag agaggtaggt gtaggaggcc tgcaggtaca aattgaccag gctgttgacg        180
gctgcctcca cgtcggtgga ataattctga cgaatctggg agctcatggt tggttggcaa        240
gaaggagcta accacaaaaa cggtgctggc aggtcccaga agcaggagat ggccgagaag        300
atggtcccgg aggttgcaag cggagaggaa atcggagggc ggtcggaggc tggaagagag        360
tccccggatc tgttccgtcc aaacactgtt gaagcaagag acagacccgc ggtcgacgcg        420
gccgcg                                                                   426
```

```
<210> 837
<211> 134
<212> DNA
<213> Homo sapien

<400> 837
ccagggccgt gggccgaccc cggcggggcc gatccgaggg cctcactaaa ccatccaatc         60
ggtagtagcg acgggcggtg tgtacaaagg gcagggactt aatcaacgca agcttatgac        120
ccgcacttac tggg                                                          134
```

```
<210> 838
<211> 538
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G

<400> 838
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc         60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc        120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca        180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac        240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc        300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat        360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat        420
cagggctttg ttttcgtagg caatggtgcg atctgagccg ccagacttgg tgaggcccan        480
gacagggagc tcgtccgagg agcaggagaa gccgtagttc cagcagctct ggatggtg         538
```

```
<210> 839
<211> 351
<212> DNA
<213> Homo sapien

<400> 839
aaggcggcaa cggtggtgaa agatatagca ggcctggtct ttgtacagcg gatgctcgtg         60
aagagggggc gagcggtaga accttgggtc cttgtagccg cggtcccagg gcggaaagat        120
cggccgcgcc agccagggca cgaagtgcat cttccccgca aaggtgatgg gctccagtcc        180
agggatctcg taccccctat ccaggggagg aggctccgac ttccgcgtgg agcgcacgcc        240
ccactcatac gccccgcgtc tcggggcccc gaagccccca aggccgagct gcccggagcc        300
agctagcgcc cgccttgcgg gcccggacgc caatgccata ccgatctgat a                351
```

```
<210> 840
<211> 574
<212> DNA
<213> Homo sapien

<400> 840
```

```
tggcctgcaa ggccgcggac agggcgagca ccgagtcgta cattttgcag ctcatcatcc      60
ccgtgctctg cgtgacgcag tccatccaca gcccttgta catggcctgg gccgtgatga      120
tgttgtcacc cgcataggag ctcatctgcc actgcgggat ggcggtgcag gccaccagac      180
ccacccagcc cagcagggcc atggagaagc ccagcaactg caggcccgaa ttggccattt      240
ccgccctcag aaaacactgg gggcgccggg cgggagaccc tacagtaaaa caaacgacac      300
ttggggggca gccccacaaa agaaaacttg aggtggagtt ttccggtcac ccaaagagac      360
aaaaagggtt tgggccaggt gaatgcaaat cttgtcacca aactacacac aaatcgaccc      420
ctccagtgaa gcgatggcct cgcggcacag ggagtaggat acgccgggag ggtggttcca      480
gacaaaattg gtggtccccg aaggccaggc ggttccctcc ggcgctctcg gcgaccctag      540
gcaaacaaaa ggtggagggg ccgtctgggc gcgt                                 574
```

<210> 841
<211> 195
<212> DNA
<213> Homo sapien

<400> 841
```
gacccagggg cacaggctcc cagatgatag cccctctctg aatgagcacc caggcaacac      60
agtccggggc tgtgtgtagc aaacctgtca gcagctgcct cctgggacaa ccacccccett      120
acatgctatc tatctaccag acaaatgaaa gctcttctta ccccatctcc caggcacccc      180
ccagcaaggg ctctg                                                       195
```

<210> 842
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 842
```
cggccgccct tttttttttt ttttcgttga aaaccaataa tttatcaaaa cgctgcgtgt      60
gtatgtgggg gggaggggtgt cacancncnc agggcagcgg ngggcggacg cacaggcagg      120
aaacggngcc cggaaagnng gggcggnann ttgccactgg ctggccatgc gggcgggcag      180
gctaaacatt nttgccgcgc aggcgca                                          207
```

<210> 843
<211> 62
<212> DNA
<213> Homo sapien

<400> 843
```
cgatggagcg tgggtaggga gggtccacag tgtccactcg ccgtgtgcga aggttgactc      60
gg                                                                     62
```

<210> 844
<211> 118
<212> DNA
<213> Homo sapien

<400> 844
```
ttgggtacac tccctggtac cgggcccccc cgatccggct gccagccctg aggccaagca      60
cggctggaga cccacgacct ggcctgccgt tgccctgagc tgcagcctcg gccccagg       118
```

<210> 845
<211> 99

```
<212> DNA
<213> Homo sapien

<400> 845
gtacactccc ctggtaccgg gcccccccac taccgagtca accttcgcac acggcgagtg      60
gacactgtgg accctcccta cccacgctcc atcgctcag                             99

<210> 846
<211> 559
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(559)
<223> n = A,T,C or G

<400> 846
cggccgccct tttttttttt ttttggttgt ggctganaat gctggagatg ctcagttctc     60
tccctcacaa ggtaggccac aaattcttgg tggtgccctc acatctgggg tcttcaggca    120
ccagccatgc ctgccgagga gtgctgtcag gacagaccat gtccgtgcta ggcccaggca    180
cagcccaacc actcctcatc caagtctctc ccaggtttct ggtcccgatg ggcaaggatg    240
acccctccag tggctggtac cccaccatcc cactacccct cacatgctct cactctccat    300
caggtcccca atcctggctt ccctcttcac gaactctcaa agaaaaggaa ggataaaacc    360
taaataaacc agacagaagc agctctggaa caaaaagtac aaaaagacag ccagaggtgt    420
gcggagaggg tgaggtggcc gcgtggacgt gggtagataa tcgcatgcag cactggaact    480
cctgatgagg ggtggggtcc ccacttctcc tcaaggtttg agggattggg gggagggggt    540
cagctgactc ananaagta                                                 559

<210> 847
<211> 430
<212> DNA
<213> Homo sapien

<400> 847
cggccgccac gctggttttg catcttcagg agacgctcgt agccctcgcg cttctcctcg     60
gccagttcgc ggaagaagtg gctcacgcct tccagagcca catcatcgcg gtcgaaatag    120
aagcccagag agaggtaggt gtaggaggcc tgcaggtaca aattgaccag gctgttgacg    180
gctgcctcca cgtcggtgga ataattctga cgaatctggg agctcatggt tggttggcaa    240
gaaggagcta accacaaaaa cggtgctggc aggtcccaga agcaggagat ggccgagaag    300
atggtcccgg aggttgcaag cggagaggaa atcggagggc ggtcggaggc tggaagagag    360
tccccggatc tgttccgtcc aaacactgtt gaagcaagag acagaccgc gggacgtcga    420
cgcggccgcg                                                           430

<210> 848
<211> 546
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(546)
<223> n = A,T,C or G

<400> 848
agagtaaagt gcagcctctc cagacactgg ggccccagtg ggcgtgggcg aagttgctgg     60
taggaggagt tggcggaagc acttggaact cctttataag tgtcagctgt gagattttaa    120
tttgatttga aaatgagtaa gtgcanaaag acaccagttc ancagctagc aagtcccgcg    180
```

242

```
tcattcagcc cagatattct tgctgacatt tttgaactct ttgccaagaa cttttcttat      240
ggcaagccac ttaataatga gtggcagtta ccagatccca gtgagatttt cacctgtgac      300
cacactgaat ttaatgcatt tcttgatttg aagaactccc taaatgaagt aaaaaaccta      360
ctgagtgata agaaactgga tgagtggcat gagcacactg ctttcactaa taaagcgggg      420
aaaatcattt ctcatgttag aaaatctgtg aatgctgaac tttgtactca agcatggtgt      480
aagttccatg agattttgtg cagctttcca cttattccac aggaagcttt tcagaatgga      540
aaactg                                                                546

<210> 849
<211> 196
<212> DNA
<213> Homo sapien

<400> 849
gaagtccttc agcaggccac gctcggacag ggtgcgcctc aaggacttct ttctgatgag       60
ggggaccttg tacatgatgc actcagagag cgccaccaga cccagcagca gcagccactt      120
catggttctt cccgggtccc aactcgaggg agaaggcgtc gacgcggccg cgaattccac      180
cacactggac tagtgg                                                     196

<210> 850
<211> 543
<212> DNA
<213> Homo sapien

<400> 850
cactgatatt ggagaaaagc acatccggca taaagtgtaa accagtgtct caaacactgg       60
aagaaccggg agagcaaaca tgattttct tatttcctct aagtaatctt tctttagtaa      120
aacaacaagt gatctttggc atagattcat actttaaagg cattaatatt gcatttatat      180
caggcaagca actatacaaa tatgctgagg gccttgaaaa taatcatcct cattttaaag      240
gaaatagtga aagcctgagt gtaaaggacc aacttaagtt gtacacattc gatgttggga      300
actaacacac agcgatgggt gggaaggaag gatgttcagg caaggttctt actcctttac      360
tcatctggtt ctggctttgg gaaaaaataa ggtttcatgt gctgggaaat acttagcagt      420
aataagtacc aaaaaggaaa cactgccctc tcattttgcc tagtaggaac ttactgtggt      480
gataagaaat atgaaaccca ttactctctt gaaccccata cttgggagta gatgcagaga      540
gct                                                                  543

<210> 851
<211> 190
<212> DNA
<213> Homo sapien

<400> 851
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt       60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt      120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc      180
tcctgccgcc                                                           190

<210> 852
<211> 407
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 852
```

```
aggcctcaca gaggcggggg cagaaggcgg cgacccanag ccgccacatc ccccgccttg       60
ggcgccgtca cagtccccag acgccctgga ctcctgcagt ctacgaagac gcgcggggga      120
cggcgtggtt ccgagagagg gcgccaaagg cgacgtgccg gccgccagct ccaggccgag      180
ccccgagcgc ctgcaggaac aggccccttc acccggcgcg ggacgcagag ctgcgagaga      240
atcttgttca gcgcggactc aacgccaggg cgccgcctag aggttggtct ctgtctcggc      300
ctcacccgcc gggagaccac agagctgctt ccccagccgc ccgccgccag aaattggaaa      360
aaaaaaaatc cagctggggt ctaggaactc ggcttctggc acctctg                   407
```

<210> 853
<211> 626
<212> DNA
<213> Homo sapien

<400> 853
```
acagtcccag tactctttgc tcagctttcg gggccggcct cgtttccgct tcccgtgctt       60
gggatccccc ttcttgcagt cacgaaaacc atcgctgggg aagagcttgc catcagtggg      120
atccaggtcc acgtcacttc caccggagtc tgaggagtgg gagctccgag aagcaccagt      180
ccctgcggtg gagacgtcag agctgccggg ggagggggct cctgcgccac agctgccggg      240
gtggtagggg ctggcttgct gaccgtcgtc cagcagctcc tgggcaaagg ggctgccctg      300
gtcaaagggc cctgggtcta gggcctcctg gaaggccatg ccatccttct ccagcagctc      360
aatgatccaa ctgagctcat cagaagagct ggaagtgagg tctcgcagct gggcatggag      420
ttggtccccc agaggcccaa agaccagacg cagctcctca agggcacaat tgcagagggt      480
ggcgccatcc atgtcacatc gtgagaagtc aatggcgctt gcgtcgtact tgttcttctc      540
cacttggtag ctgatccagt ccagaacctg cgtcttcgac cagaactggg gctgttcccc      600
caaccagctg gccttctctg taccct                                          626
```

<210> 854
<211> 218
<212> DNA
<213> Homo sapien

<400> 854
```
atgacggctg cccgaagccc cccgagattg cacatggcta tgtggagcac tcggttcgct       60
accagtgtaa gaactactac aaactgcgca cagaaggaga tggagtatac accttaaatg      120
ataagaagca gtggataaat aaggctgttg gagataaact tcctgaatgt gaagcagtat      180
gtgggaagcc caagaatccg gcaaacccag tgcagcgg                            218
```

<210> 855
<211> 50
<212> DNA
<213> Homo sapien

<400> 855
```
gaggaacgaa gaataaagga gattgtgaag aaacattctc agtttattgg                 50
```

<210> 856
<211> 116
<212> DNA
<213> Homo sapien

<400> 856
```
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gccccgcgag cacagagcct       60
cgcctttgcc gatccgccgc ccgtccacac ccgccgccag ctcaccatgg atgatg         116
```

<210> 857
<211> 402
<212> DNA
<213> Homo sapien

244

<400> 857
ggcgacgacc ccaagaggga ggtgggccac gatttctact tctttttttca ccattcgaca   60
gttccactct tacacggcag ccacatagtg ttcttccatc tagctctcgg actgcatcag   120
ctgcatctcg gggatcttca aattcaacaa aagcaaagcc gggtgggttt ctagcaaccc   180
acacacttcg gagtggtcca tagtagccaa aagcccgttc caattccgtc ttgttgccat   240
tgtttccaag attgcctaca taaaccttac agtccaatgg acaggaatca cgatgcattt   300
cgagatctag ggttaaaaaa tgcggcggct caaatccaca cgctccgatg agtcttcccg   360
ctttcctccg gcccaacacc aaccaacgtc gacgcggccg cg   402

<210> 858
<211> 172
<212> DNA
<213> Homo sapien

<400> 858
acattttatg acctctccca ataggggcag aggtgagcac ccctggtgaa aagttaagac   60
tcagtgagta taaatacgcc aagaagagct gtggcttctt tcactggtgt cctcagaaag   120
gctgtgagca gtgttggtgg catacctgtc acagcatcta gcaaagcacc tg   172

<210> 859
<211> 196
<212> DNA
<213> Homo sapien

<400> 859
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt   60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt   120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc   180
tcctgccgcc ggtcga   196

<210> 860
<211> 538
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G

<400> 860
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc   60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc   120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca   180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac   240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc   300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat   360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat   420
cagggctttg ttttcgtagg caatggtgcg atctgagccg ccagacttgg tgaggcccan   480
gacagggagc tcgtccgagg agcaggagaa gccgtagttc cagcagctct ggatggtg   538

<210> 861
<211> 204
<212> DNA
<213> Homo sapien

<400> 861

```
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt      60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg acgagagcgt     120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc     180
tcctgccgcg tcgacgcggc cgcg                                            204
```

<210> 862
<211> 217
<212> DNA
<213> Homo sapien

<400> 862
```
aatgtcaggg gtgttggggg ctttggctgg gtcctgggtc ttcgtgtaga gacctggagg      60
cgcttggttc ttggggttct ccaggattcc agcctcgtag ctgatgtgca tgaggttctc     120
atccatgctc cacgggttct tgggagtgac cgggatggga atcccgtgtt gctttgcgta     180
ctccatcagg tcattgcggc ccttgaaccg gttgtag                             217
```

<210> 863
<211> 192
<212> DNA
<213> Homo sapien

<400> 863
```
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt      60
tgtggccctt gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt     120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacgtc     180
gacgcggccg cg                                                        192
```

<210> 864
<211> 147
<212> DNA
<213> Homo sapien

<400> 864
```
tttccccttg aagaagtaga cccgctcccg gccactgtag ctatgggcag ggagggccaa      60
ggctgcatcc acgttgtccg ggatgccatc gaagccgtca gagatatttc gggggtaatc     120
agggtccagg acaccatcct caaagcg                                        147
```

<210> 865
<211> 446
<212> DNA
<213> Homo sapien

<400> 865
```
cggccgctgg acttggcttg agctgtgagg ggtgggaggg gaggatagca ccggaagatg      60
ctgctccggg cccaacacca gccctggcca ggctctcccc tcccaggggc agcgcccagt     120
ccccaggggc tgccagagcc ctgtgtgcct tgccgcattc ccctgatgca gcttttggca     180
actgaaaggc agggctctcg ctgagtgcac ctggggcttc ctgagcccat ctgcggcggc     240
cccaccctgg cctaggtgct gagtgcagct gctgcagaca gcccctccct ccttagtgga     300
gcctggaggg tggggtgctc ggggatgcag gcaggggcag gggctccaga gccacaggtc     360
agaagcaggg ctgggggagg ggtggagcca ttcagcctca ggcaccctca cagctaggtg     420
actaggggca gggacagaat ggggtg                                         446
```

<210> 866
<211> 87
<212> DNA
<213> Homo sapien

<400> 866

```
tccctcaact ggaccatggg cctgcccacc gacaatggcc acgacagcga ccaggtgttt     60
gagttcaacg gcacccaggc agtgagg                                         87
```

<210> 867
<211> 123
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(123)
<223> n = A,T,C or G

<400> 867
```
cncctggtac cgggccccccc cactttaaaa tcttttgtta agaaatagga aagattagga    60
aatatcatac tgcacctgaa atgctgcagc aggggttttt gtttgcttgt ttttgtcctt   120
cag                                                                 123
```

<210> 868
<211> 634
<212> DNA
<213> Homo sapien

<400> 868
```
caggctgcgg taggtggcaa tctcctgctc cagccgcgac ttgatgtcca tgagccgctg    60
gtactcctga ttctgccgct cactatcagc tcgcacatcg cccagctggg cttcaatacc   120
gctgatcagc gcctggatat gcgccagctg ggctccaaag cgcgcctccg tttctgccag   180
tgtgtcttcc aaggcagctt tcatgctcag ctgtgactgc agctcaatct caagaccctg   240
aagggtgcgc cgcaggtcag taacctcgga cctgctcatc tggagctgct ccgtgtggcc   300
agcgacctcc cggttcaatt cttcagtccg gctggtgaac caggcttcag catccttccg   360
gttctgctcg gccatgacct catattggct tcgcatgtca ctcaggatct tggcgagatc   420
ggtgcccgga gcggaatcca cctccacact gacctggcct cccacttggc ccctcagcgt   480
actgatttcc tcctcatggt tcttcttcag gtaggccagc tcttccttca ggccttcgat   540
ctgcatctcc aggtcggtcc tggccagggt cagctcatcc agcaccctgc gcaggccgtt   600
gatgtcggcc tccacgctca tgcgcagagc ctgt                               634
```

<210> 869
<211> 197
<212> DNA
<213> Homo sapien

<400> 869
```
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt    60
tgtggcccct gagggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt   120
gtgtcgctgc agcgacgagg atggcactgg atggcttaga gaaactagca ccacaacctc   180
tcctgccgcc gtcgacg                                                  197
```

<210> 870
<211> 579
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(579)
<223> n = A,T,C or G

<400> 870

247

```
cggccgccct tttttttttt tttttttttt tttttatggg gccaatttta aatagtttta     60
tttaagacat tgcattttcc acttacaata cagtgtttat aaagtgcaat gttatttcct    120
tcccctgtgc atatgttcca tattcaagta ttganaatgc ccagtaactt actatagcag    180
cttaactttt taaaactgcc acagaatttg ctacnaattt aggnccttca aatgttttaa    240
atgtgnggaa caatgctaca tntacacttg gntggcttaa tcaacctntt caatgggggg    300
ccctgaggaa gcnccnccag agggaggagc tccaccacca ggaaatcccc caggcattcc    360
tcctggcatg cctcctgcac tntggtacag cttggtgatg atggggttgc aaactttctc    420
cagctntttc tgntgatgtt caaattcttc cttctcagca gtctgattnt tatcaagcca    480
gnngataatt tcattacact tgtccanaat cttctgtntg ncctcatcgn taatcttgcc    540
ttgaagtttc tcatcttcaa cagntgcttt catgttgaa                          579
```

<210> 871
<211> 518
<212> DNA
<213> Homo sapien

<400> 871
```
ctttctcctt cttatagacg ttccggacgg gcatgaccgg tccggtcagc tgggtggcca     60
gtttcagttc ttcagcagaa ctgtctccct tcttgggggc cgagggcttc ctggggaaga    120
ggatgagttt ggagcggtac tccttcagcc gctgcacgtt ggcctgcagg gactccgtgg    180
acttgttccg cctcctcgga tccacagaaa tgccgatggt ccgggccacc ttcttgtgaa    240
tgccggccac cctgagctcc tccaggctga agccgcggcc ggcgcgcacc ttcgtgtggt    300
accgaaccgt ggggcagcgc acgatgggcc ggatgggacc cgacgcgggg cgcggggcga    360
tgcggcgcgc cttggcttgc cgggccttac gtctgcggat cttacgggcc ggctggttga    420
accacgtggc cacgcgccgc tgccagtcct tgtggaagtg gggcttcaag accatgccat    480
tccggctggg cgccatggct gcctacggcc ctgcggct                           518
```

<210> 872
<211> 404
<212> DNA
<213> Homo sapien

<400> 872
```
ctaaacactg tccagcgcag gggggtgcta gggaggtagc gtgacaacac gatggctgcg     60
atgcctgaag tgatgaccac gatggcggaa gtgacagaga ggatgttgac cacgcagtac    120
tgcagagcca ccgcatcttg aggggtgccc acgtagcgca gcactgtgcc atggaacagg    180
gcagctgtga tgaagctcac atggcccagc accaccagca ccaggcctgt cttcatcagc    240
accttccgga agtcgcccac actcaggcct ccgaggcgca gacacatgtc ggctccgcgc    300
tggtcccgcc cccggcttca gcgcggctcc cgaggctgcg gccgccggg ggaccctgct    360
cccatcccgc tggcccgtcg cccgcgcgcc ccgcaccgtc gcgt                     404
```

<210> 873
<211> 175
<212> DNA
<213> Homo sapien

<400> 873
```
ggctgccagc gcctctaccc cgtgctgcag cagagcctgg tgcgggccgc ccgccgcagg     60
ggcgccgccg cccagccctg aaccagaagc ctgagcaact acggacgcaa gccgaggacc    120
gtgctgccgc cgtccacgaa aagacccgcg ccatcggcct ccagtttgcg tcgag         175
```

<210> 874
<211> 215
<212> DNA
<213> Homo sapien

<400> 874
```
ggtagagaac cctgcggctg cgctttcggt gcccgcgaga ggcgctgggg cgcccggcag     60
```

248

```
gggccgctgc gggctccggg agagggtcga aggtgaagat ctcaggaccg gagccccgcc    120
ggggtcccgg gatggtggag ggggccgggg tcggggcctg caggatggtc atggtcgggt    180
ggcagctgcg agagtgacac atggtgagcc gagcg                               215
```

<210> 875
<211> 208
<212> DNA
<213> Homo sapien

<400> 875
```
atccagagac aatctgccgg ttgtcagagg agaaggccac actcagcaca tccttggtat    60
ggcccacaaa tcgcctcgtg gtggtgcccg ttgtgagatc ccagaggcgc agggttccat    120
cccaggagcc tgagagggca aactggccat ctgaggagat aaccacatca ctaacaaagt    180
gggagtgacc ccgcagagca cgctgtgg                                       208
```

<210> 876
<211> 484
<212> DNA
<213> Homo sapien

<400> 876
```
gagcagctgg tttctcctgg acagcagcat ctggctccgc tcccttcgga actccaggta    60
ctccttattg tttttgagct tgttcatgca gtccatgagg gctgggtagc cacctgagaa    120
tcgccacagg tgcactgcct ggtcctgctc cccataccac gtgttccagt tgcccacgag    180
tgagcatggg tagtcctcat ccaggtgaag cttgggcagc acagcctccg tgaggctgtt    240
gtaggcatcc aggtattcag gctttacatt gtgaaactgg atcttataga ggttgctggt    300
ttccttcttg dacagcaggg tggagtgggc atccttccgg ggatccactt tgtgaacaaa    360
gagggagcgg aaccagctgc cttcattgtc cttggaatag aaacgcgccg cagctgcaga    420
cgcaacgtcc ccagcgcgag gccccgggcc ccccagcagc cgccgcgccg tcacagagat    480
gctg                                                                 484
```

<210> 877
<211> 558
<212> DNA
<213> Homo sapien

<400> 877
```
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc    60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc    120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca    180
gtgagggcgt cctggggttc tccggttctc accacccttg ggccacgccg tctagtccac    240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc    300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat    360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat    420
cagggctttg ttttcgtagg caatggtgcg atctgagccg ccagacttgg tgaggcccag    480
gacagggagc tcgtccgagg agcaggagaa gccgtagttc cagcagctct ggatggtggg    540
gaggtagacc agggacca                                                  558
```

<210> 878
<211> 503
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(503)
<223> n = A,T,C or G

<400> 878
cggccgcaac cgcgcgaacc cgaagtcgat gattttcacc ggggccccgg gcgtgtcgtc   60
ggcgtacagg atgttctccg gcttgaggtc gcggtgcacc acgcccgcct cctcgtgcat   120
gaagctcacg gncgacacga ggctgcgcag gatctggctt gcttccgact cgctgaagtg   180
ccgcntcttg cggatgtgct ccagcagctc cccgccccgc agcagctcca ggaccaggta   240
cgtgtgcagc tggtcgtgat gcacctcgtg cagattcacc acgttggggt gtgactggca   300
caggcgcagg gcagccactt cgcgctgcgt gttcgcctcc agcctgcgac tgaggatctt   360
gactgcgaac tcctggccgc tctggcgctg gcggcagcgg cgacacacag aaaagctgcc   420
ctggcccagc gcaggctccc gcaggtccag ctcgtactgc tggaagaagg gcgagtcctg   480
catcatagcg ctcctggcca ccg   503

<210> 879
<211> 78
<212> DNA
<213> Homo sapien

<400> 879
ctgcctcggc tggcgggcgg ggggaggcgg agagctcggg gcacgcgctg ccgtccggac   60
cgcgtcgacg cggccgcg   78

<210> 880
<211> 211
<212> DNA
<213> Homo sapien

<400> 880
tgatgtgggc gattgatgaa aaggcggttg aggcgtctgg tgagtagtgc atggctagga   60
atagtcctgt ggtgatttgg aggatcaggc aggcgccaag gagtgagccg aagtttcatc   120
atgcggagat gttggatggg gtggggaggt cgatgaatga gtggttaatt aattttatta   180
gggggttaat tttgcggtcg acgcggccgc g   211

<210> 881
<211> 373
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(373)
<223> n = A,T,C or G

<400> 881
cccacagtgg cttgtttccg cagtgcgcgg ccgtcannac ccaactctgg tccaccagga   60
cacccgcgca gtggaacgag aggccgtnga agagcgagac ctgccagggc tgcgagccgc   120
gcgcgcacgg ggcgccatag gcttcggggt ccaagcgcgt gtcgttttgg gggagcagcg   180
ccgcctctgc ggcccagagt tgcgccatca gcagcggcag cagcttcgcc agagcccggg   240
cgccagaggc ggcggagagg tggaggtgcg gagctctcat ggccaggatc tgggagtcgc   300
cgataggaag gagggagggg acccagacgt gcctntgccc tgcctgtggt ctgccgcgtc   360
cgacacggcc gcg   373

<210> 882
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)

250

```
<223> n = A,T,C or G

<400> 882
cggccgcgtt tttttttttt ttttcagaca attcagcctt tattttanaa aataattctg      60
tagcttccac tttctttcat gaaactgagg tcaggcaaga aacaaaaatc caccaagtcc     120
tctccatcct gccatggcgt cctggcctgt gaggacatgg ggcgcctggg agcgggcggg     180
gaggctgggc agcactgggc cagaggcgtc ctggtcactg ctccacctgg tcactgctcc     240
acctcatgct gagaggagcc tgtgtgtcaa accccagggg aaaaagggac aggcagatcg     300

<210> 883
<211> 230
<212> DNA
<213> Homo sapien

<400> 883
ggtagagaac cctgcggctg cgctttcggt gcccgcgaga ggcgctgggg cgcccggcag      60
gggccgctgc gggctccggg agagggtcga aggtgaagat ctcaggaccg gagccccgcc     120
ggggtcccgg gatggtggag ggggccgggg tcggggcctg caggatggtc atggtcgggt     180
ggcagctgcg agagtgacac atggtgagcc gagcggtcga cgcggccgcg                 230

<210> 884
<211> 601
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(601)
<223> n = A,T,C or G

<400> 884
gcccccaatt ccagctgcca caccacccac ggtgactgca ttagttcgga tgtcatacaa      60
aagctgattg aagcaaccct ctactttttg gtcgtgagcc ttttgcttgg tgcaggtttc     120
attggctgtg ttggtgacgt tgtcattgca acagaatggg ggaaaggcac tgttctcttt     180
gaagtagggt gagtcctcaa aatccgtata gttggtgaag ccacagcact tgagcccttt     240
catggtggtg ttccacactt gagtgaagtc ttcctgggaa ccataatctt tcttgatggc     300
aggcactacc agcaacgtca ggaagtgctc agccattgtg gtgtacacca aggcgaccac     360
agcagctgca acctcagcaa tgaagatgag gaggaggatg aagaagaacg tcacgagggc     420
acacttgctc tcagtcttag caccatagca gcccaggaaa ccaagagcaa agaccacaac     480
gccggctgcg atgaggaagt agcccacgtt gacaaactgc atggcactgg acgacagtgg     540
cccgaagatc ttcanaaagg atgccccatc gattgacacc cagatgccca ctgccaacag     600
g                                                                     601

<210> 885
<211> 207
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 885
caggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg      60
ttgtggccct tgagggtgcc annaagggtc atctgctcag ncatggcggc ggcgagagcg     120
tgtgtcnntg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct     180
ctcctgccgc cggtcgacgc ggccgcg.                                        207
```

251

```
<210> 886
<211> 442
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(442)
<223> n = A,T,C or G

<400> 886
cancttatan aaanggnaaa ggaaacccca acatgcntgc nctgccttgg tgaccaggga      60
agtcacccca cggctatggg gaaattancc cgaggcttag ctttcattat cactgtctcc     120
cnnggtgtgc ttgtcaaaga gatattccgc cnagccanat tcgggcgctc ccatcttgcg     180
caagttggtc acgtggtcac ccaattcttt gatggctttc acctgctcat tcaggtaatg     240
tgtctcaatg aagtcacaca aatgggggtc attttttgtca gnggccagtt tgtgcagttc    300
cagtagtgac tgattcacat ttttttccaa atgtaatgca cactccattg cattcagccc     360
gctctcccag tcatcacagt ctggtttntt gatatcctga aggaagattc ggccacctcg     420
tnggttctgc agcttcatca gt                                             442

<210> 887
<211> 222
<212> DNA
<213> Homo sapien

<400> 887
gctcaggctc caaagccagc aggaaagagg tagctcggga cgtggagccg ccgcccaggt      60
gcgccaggac cacctcggcc gtcaccttag ccaggtggct gcttaggtcc actgtgcgct     120
tcacgtcctc attgatcagc ggcggtgcct cggaggaggc gctgcccggc gccgggggccc    180
aagtcccaag caacaggagc agaaacaagc cggcggctgg cg                        222

<210> 888
<211> 89
<212> DNA
<213> Homo sapien

<400> 888
ggtggcgtag cgcccgctta taaagccgca acacctttg ctgatgggtc aggtagggtc       60
ccgacgccaa gaacgccatt acggccgcg                                       89

<210> 889
<211> 451
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(451)
<223> n = A,T,C or G

<400> 889
gcggncgctg gacttggctt gagctgtgag gggtgggagg ggaggatagc accggaagat      60
gctgctccgg gcccaacacc agccctggcc aggctctccc ctcccagggg cagcgccag      120
tccccagggg ctgccagagc cctgtgtgcc ttgccgcatt cccctgatgc agcttttggc     180
aactgaaagg cagggctctc gctgagtgca cctggggctt cctgagccca tctgcggcgg     240
ccccaccctg gcctaggtgc tgagtgcagc tgctgcagac agcccctccc tccttagtgg     300
agcctggagg gtggggtgct cggggatgca ggcaggggca ggggctccag agccacaggt     360
```

```
cagaagcagg gctgggggag gggtggagcc attcagcctc aggcaccctc acagctaggt    420
gactaggggc agggacagaa tggggtgaat t                                   451
```

```
<210> 890
<211> 66
<212> DNA
<213> Homo sapien
```

```
<400> 890
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac ctgctgcctc acccacagct    60
tttgat                                                               66
```

```
<210> 891
<211> 599
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(599)
<223> n = A,T,C or G
```

```
<400> 891
gggcgtcctg gtgcttacca cctggaaact ggtgaggtgg tgggagaact cctggtggac    60
cctagtggaa gccttccagt aatttcttga agctgagcgc tcaggtgagt agggcgacat    120
ctggtggccg gttgttgaag gtcattgcag agaggaagga agccgaggag gggagcctgc    180
agtgagggcg tcctgggggtt ctccggttct caccaccctt gggccacgcc gtctagtcca    240
cacctgagga gttggtcagg tagaaggggc ggatgaccgt gcggaagccg ttgaagtgcc    300
ctgccgggca ggggaaggag gaggtgctct tcgagctgtt ggtgtccagg gcactgggaa    360
tcgcagcctt ccagccctcg aaatcggtga cgtctgccac gaagagccct tcgcagagca    420
tcagggcttt gttttcgtag gcaatggtgc gatctgagcc gccagacttg gtgaggccca    480
ggacagggag ctcgtccgag gagcaggaga agccgtagtt ccagcagctc tggatggtgg    540
ggaggtagac cagggaccag gacaccctct tgtcctggaa gangaagctg gggtgttgt    599
```

```
<210> 892
<211> 113
<212> DNA
<213> Homo sapien
```

```
<400> 892
gtctcaaaca ggaccgcatt tccggcattt cggctggtgt ccgtgttagt ggccacctgg    60
gccagcaagt cattcatggt ctcactgctc tcctcgtggt tccggcccag gat           113
```

```
<210> 893
<211> 208
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(208)
<223> n = A,T,C or G
```

```
<400> 893
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg    60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg    120
tgtgtcgctg cagcgacgag gatggcactg gatggcttan agaaactagc accacaacct    180
ctcctgccgg tcgacgcggc cgcgaatt                                      208
```

<210> 894
<211> 67
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(67)
<223> n = A,T,C or G

<400> 894
gcgatggganc gtgggtaggg aggtccaca gtgtccactc gccgtgtgcg aaggttgact   60
cggtagt   67

<210> 895
<211> 58
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(58)
<223> n = A,T,C or G

<400> 895
gcggccgccc ttttttttttt tttttttttt tttttttttt tttttttcccn cnctaaaa   58

<210> 896
<211> 177
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(177)
<223> n = A,T,C or G

<400> 896
gacattttat gacctctccc aatnggggca gaggtgagca cccctggtga aaagttaaga   60
ctnagtgagt ataaatacgc caanaanagc tgtggcttct ttcactggtg tcctcagaaa   120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt   177

<210> 897
<211> 542
<212> DNA
<213> Homo sapien

<400> 897
gctttctcct tcttatagac gttccggacg ggcatgaccg gtccggtcag ctgggtggcc   60
agtttcagtt cttcagcaga actgtctccc ttcttggggg ccgagggctt cctggggaag   120
aggatgagtt tggagcggta ctccttcagc cgctgcacgt tggtctgcag ggactccgtg   180
gacttgttcc gcctcctcgg atccacagaa atgccgatgg tccgggccac cttcttgtga   240
atgccggcca ccctgagctc ctccaggctg aagccgcggc cggcgcgcac cttcgtgtgg   300
taccgaaccg tggggcagcg cacgatgggc cggatgggac ccgacgcggg gcgcggggcg   360
atgcggcgcg ccttggcttg ccgggcctta cgtctgcgga tcttacgggc cggctggttg   420
aaccacgtgg ccacgcgccg ctgccagtcc ttgtggaagt ggggcttcaa gaccatgcca   480
ttccggctgg gcgccatggc tgcctacggc cctgcggctc ctggtcgacg cggccgcgaa   540

```
tt                                                                    542
```

```
<210> 898
<211> 165
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(165)
<223> n = A,T,C or G

<400> 898
tancnatctg ggttacccag ccgttgtggc ccttgagggn gccacgaagg gtcatctgct    60
cagtcatggc ggcggcnana gcgtgtgtng ctgcancgac gaggatggca ctggatggct   120
tanagaaact agcaccacaa cctctcgtcg acgcggccgc gaatt                   165

<210> 899
<211> 67
<212> DNA
<213> Homo sapien

<400> 899
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gctgctgcct cacccacagc    60
ttttgat                                                              67

<210> 900
<211> 77
<212> DNA
<213> Homo sapien

<400> 900
cttccaggtc cagagctccc aggtttccag gttgcagtcc ctccagtccc agagctccca    60
gggtttcggt ttccagt                                                   77

<210> 901
<211> 114
<212> DNA
<213> Homo sapien

<400> 901
gggccgggga ggacggctgg gggctccggg gtcgcctgca caattgcctg agcaggaggc    60
gcaagtggga gatgacgata aagggcgggg ccagcgcggg ccgagagtgg aatt         114

<210> 902
<211> 64
<212> DNA
<213> Homo sapien

<400> 902
tacactactc ctgaggatgc tactcccgag cccggagagg acccacgcgt gacccgggcc    60
aagt                                                                 64

<210> 903
<211> 63
<212> DNA
<213> Homo sapien
```

255

<400> 903
tcaaaagctg tgggtgaggc aggtcgacgc ggccgcgaat tccaccacac tggactagtg   60
gat   63

<210> 904
<211> 142
<212> DNA
<213> Homo sapien

<400> 904
tcctcagcca gggagacagg gaccaggcag cacaggcctg ccagcaggag gatgccccac   60
gagacagaag acggcattgt cgattcactg tcccaggtca ggtcgacgcg gccgcgaatt   120
ccaccacact ggactagtgg at   142

<210> 905
<211> 101
<212> DNA
<213> Homo sapien

<400> 905
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gccacctccg agagcctgga   60
tgtgatggcg tcacagaaga gaccctccca gaggcacgga t   101

<210> 906
<211> 506
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(506)
<223> n = A,T,C or G

<400> 906
gcggccgcac acacagccag gcgctaggct ccctgcggga cctcgggaag ggggaagagc   60
gtcaacaatt tacggagggt ccagccgctg ggtcagattg agacaaacca ttgtgtggtt   120
gggtttgggt cagcaggctg gagagggttc tgttcttttt gatcattatc gtttggggcc   180
ccaagggagg gtcttgggag ccacctgagc cccaaagctg ggaaattcct canagctgct   240
catgtcagga gccttctcac tgctgctggc ggnccagggt gcgtcccgca ccacaaagcc   300
tntggaaggt gccttggcct cttcgtgtgc tgggggtttc atgtatacct gcagcgcctc   360
actgtccacc acgtcagcta ggtattcctc ctccagattg aggatgtggt cgatggcttc   420
ctccacattc tctgggagcc ccgtcacagt gacgcagttg gggtctgggg ctccgctctg   480
tgggaagcga atgtccacct tgaatt   506

<210> 907
<211> 93
<212> DNA
<213> Homo sapien

<400> 907
tcccgctgca caagttcacg tccatccgcc ggaccatgtc ggaggttggg ggctctgtgg   60
aggacctgat tgccaaaggc cccgtctcaa agt   93

<210> 908
<211> 238
<212> DNA
<213> Homo sapien

<400> 908
gggtagagaa ccctgcggct gcgctttcgg tgcccgcgag aggcgctggg gcgcccggca   60
ggggccgctg cgggctccgg gagagggtcg aaggtgaaga tctcaggacc ggagccccgc   120
cggggtcccg ggatggtgga gggggccggg gtcggggcct gcaggatggt catggtcggg   180
tggcagctgc gagagtgaca catggtgagc cgagcggagg tcgacgcggc cgcgaatt   238

<210> 909
<211> 190
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(190)
<223> n = A,T,C or G

<400> 909
gggcgtcctg gtgcttacca cctgnaaact ggtgaggtgg tgggagaact cctggnggac   60
cctagtggaa gccttccagt aatttcttga anctgancgc tcaggtgagt agggcgacat   120
ctggnggccg gntgttnaan gtcattgcnn anaggaagga agccgaggag gggancctgc   180
ngtgagggcg   190

<210> 910
<211> 93
<212> DNA
<213> Homo sapien

<400> 910
tcccgctgca caagttcacg tccatccgcc ggaccatgtc ggaggttggg ggctctgtgg   60
aggacctgat tgccaaaggc cccgtctcaa agt   93

<210> 911
<211> 261
<212> DNA
<213> Homo sapien

<400> 911
gggtccgtca gggctgaaga cctgcccagg cacacaactc accacggccg gtagcccatt   60
ctcgcaggtg acattcttca tggggtccag tgacacctgg gggcccagct tgcagctgga   120
gatgtgggcc tctgtgccgg tgcagtccat ggagaatggc cagtagcgct gcttcctccg   180
tgaggcaaac attttgtaca ctttggtatt gtatgtcctc tccccaggga agccaaacat   240
gccgcagacc acgcgggaat t   261

<210> 912
<211> 67
<212> DNA
<213> Homo sapien

<400> 912
gcgatggagc gtgggtaggg agggtccaca gtgtccactc gccgtgtgcg aaggttgact   60
cggtagt   67

<210> 913
<211> 545
<212> DNA
<213> Homo sapien

<400> 913

```
gctttctcct tcttatagac gttccggacg ggcatgaccg gtccggtcag ctgggtggcc     60
agtttcagtt cttcagcaga actgtctccc ttcttggggg ccgagggctt cctggggaag    120
aggatgagtt tggagcggta ctccttcagc cgctgcacgt tggcctgcag ggactccgtg    180
gacttgttcc gcctcctcgg atccacagaa atgccgatgg tccgggccac cttcttgtga    240
atgccggcca ccctgagctc ctccaggctg aagccgcggc cggcgcgcac cttcgtgtgg    300
taccgaaccg tggggcagcg cacgatgggc cggatgggac ccgacgcggg gcgcggggcg    360
atgcggcgcg ccttggcttg ccgggcctta cgtctgcgga tcttacgggc cggctggttg    420
aaccacgtgg ccacgcgccg ctgccagtcc ttgtggaagt ggggcttcaa gaccatgcca    480
ttccggctgg gcgccatggc tgcctacggc cctgcggctc ctgcgcgtcg acgcggccgc    540
gaatt                                                                545
```

\<210\> 914
\<211\> 295
\<212\> DNA
\<213\> Homo sapien

\<400\> 914
```
gctcggcatc agaccagttc ctcagcttcc tgaagtaacc atagcaattg gacttgtggt     60
aaaaccatcc aggagcacag ctgggtctca tgatgatatc acccaggact cctgtttttgg   120
ccaggcagct cagcaatagg agcagccgca tgcttctgga agccatcttc ctcctaccct    180
gaggatgtag ctagtgcaag gatctcagag accttactag cgcttctttg aaactcctgg    240
gttctccttg atctgcaaat ctgtttggca accaaggtcg acgcggccgc gaatt          295
```

\<210\> 915
\<211\> 391
\<212\> DNA
\<213\> Homo sapien

\<400\> 915
```
gctaaacact gtccagcgca gggggggtgct agggaggtag cgtgacaaca cgatggctgc    60
gatgcctgaa gtgatgacca cgatggcgga agtgacagag aggatgttga ccacgcagta   120
ctgcagagcc accgcatctt gaggggtgcc cacgtagcgc agcactgtgc catggaacag    180
ggcagctgtg atgaagctca catggcccag caccaccagc accaggcctg tcttcatcag    240
caccttccgg aagtcgccca cactcaggcc tccgaggcgc agacacatgt cggctccgcg    300
ctggtcccgc ccccggcttc agcgcggctc ccgaggctgc gggccgccgg gggaccctgc    360
tcccatcccg ctgtcgacgc ggccgcgaat t                                   391
```

\<210\> 916
\<211\> 559
\<212\> DNA
\<213\> Homo sapien

\<220\>
\<221\> misc_feature
\<222\> (1)...(559)
\<223\> n = A,T,C or G

\<400\> 916
```
gggcgtcctg gtgcttacca cctggaaact ggtgaggtgg tgggagaact cctggtggac     60
cctagtggaa gccttccagt aatttcttga agctgagcgc tcaggtgagt agggcgacat    120
ctggtggccg gttgttgaag gtcattgcag agaggaagga agccgaggag gggagcctgc    180
agtgagggcg tcctggggtt ctccggttct caccacccctt gggccacgcc gtctagtcca    240
cacctgagga gttggtcagg tagaagggggc ggatgaccgt gcggaagccg ttgaagtgcc    300
ctgccgggca ggggaaggag gaggtgctct tcgagctgtt ggtgtccagg cactgggaa     360
tcgcagcctt ccagccctcg aaatcggtga cgtctgccac gaagagccct cgcagagca     420
tcagggcttt gttttcgtag gcaatggtgc gatctgagcc gccagacttg gtgaggccca    480
ggacagggag ctcgtccgag gagcaggaga agccgtagtt ccagcagctc tggatggngg    540
ggangtagac cagggacca                                                 559
```

<210> 917
<211> 447
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(447)
<223> n = A,T,C or G

<400> 917
gctccttggc gagcacgtga ccccggcggg cacgcaggag ggcaggcagg cccctgcgca   60
ggcgctgggt ggactgcttc caggtgtcat attggaagaa cttgcccacg gggtatctgg   120
ggaagttgtc cggaagcacg gtcggagggg tcgacacgtc cctctcggac ttggcggggg   180
tagcacagta cgtctccagg agggccaggt cacagctgcg gaaacagcac tcctcaacga   240
tgccacggct gcgacggctc acacggcttg cgggcctgct gaantanaag ccgcggtccc   300
cacagacgaa ctggagggtg tccaccagct ccccgncgca cagggtctca ctggggcggn   360
aagcagcaat gcancacgag gcgaaggcca anaaggngan aagcaccanc atcgacttcc   420
ccattgggat tcccattggt gtctgga   447

<210> 918
<211> 574
<212> DNA
<213> Homo sapien

<400> 918
gctccttggc gagcacgtga ccccggcggg cacgcaggag ggcaggcagg cccctgcgca   60
ggcgctgggt ggactgcttc caggtgtcat attggaagaa cttgcccacg gggtatctgg   120
ggaagttgtc cggaagcacg gtcggagggg tcgacacgtc cctctcggac ttggcggggg   180
tagcacagta cgtctccagg agggccaggt cacagctgcg gaaacagcac tcctcaacga   240
tgccacggct gcgacggctc acacggcttg cgggcctgct gaagtagaag ccgcggtccc   300
cacagacgaa ctggagggtg tccaccagct ccccgccgca cagggtctca ctggggcggt   360
aagcagcaat gcagcacgag gcgaaggcca agaaggtgag aagcaccagc atcgacttcc   420
ccattgggat tcccattggt gtctggaagc cggcgacgct gccgcccacc tccctgctgc   480
gtgtcgcaaa ccgaacagcg ggcgttggcc ctcctgccgg acactcctct gccagcgccg   540
ctctggccga gtcgcggggg ccgaatgtgc gacg   574

<210> 919
<211> 139
<212> DNA
<213> Homo sapien

<400> 919
gccgcgctcg tcgtcgacaa cggctccggc atgtgcaagg ccggcttcgc gggcgacgat   60
gccccccggg ccgtcttccc ctccatcgtg gggcgcccca ggcaccaggg cgtgatggtg   120
ggcatgggtc agaaggatt   139

<210> 920
<211> 576
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(576)
<223> n = A,T,C or G

<400> 920
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg   60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa   120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt   180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa   240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat   300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat   360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg   420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct   480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgnttca cctacagcgt   540
cactgtcgat ggntgnacga gtcacaccgg nagcct   576

<210> 921
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 921
gcgcatctgc ccgccctagt cggggaagag caggaagccg gagaagacgc tgtcagagcc   60
ctggatgccc accatgtcgt agtagtcatt gacagccagc cacacctcct cgcccacctg   120
caacctcagc agcacaccgc ccgagttgac ctgattggtt ttggacgtgt ggccacagaa   180
ggtgaccact ttgacgccgc tgcggtacag cagcacgcac aggttggctg tatgcgacgc   240
gtggtagaca aagtagtaga ggccggggac tttgcaggtg aacttgccag tgctcgtgtc   300
ataatctccc tgcgggttgg tgaggaccgc gttgaatctg atcaggctgt tgggtgcagg   360
gggctggtgg gtctgccgag tgaccgngaa cactgactgg aatttctnnt tgnatctgnc   420
c   421

<210> 922
<211> 177
<212> DNA
<213> Homo sapien

<400> 922
gacattttat gacctctccc aatagggggca gaggtgagca cccctggtga aaagttaaga   60
ctcagtgagt ataaatacgc caagaagagc tgtggcttct ttcactggtg tcctcagaaa   120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt   177

<210> 923
<211> 133
<212> DNA
<213> Homo sapien

<400> 923
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gcgagcagcg gcggcggcgc   60
ggagagacgc agcggaggtt ttcctggttt cggaccccag cggccggatg gtgaaatcct   120
ccctgcagcg gat   133

<210> 924
<211> 216
<212> DNA
<213> Homo sapien

<400> 924

```
gggtagagaa ccctgcggct gcgctttcgg tgcccgcgag aggcgctggg gcgcccggca      60
ggggccgctg cgggctccgg gagagggtcg aaggtgaaga tctcaggacc ggagccccgc     120
cggggtcccg ggatggtgga ggggggccggg gtcggggcct gcaggatggt catggtcggg    180
tggcagctgc gagagtgaca catggtgagc cgagcg                               216
```

<210> 925
<211> 649
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(649)
<223> n = A,T,C or G

<400> 925
```
ggcccccaat tccagctgcc acaccaccca cggtgactgc attagttcgg atgtcataca      60
aaagctgatt gaagcaaccc tctacttttt ggtcgtgagc cttttgcttg gtgcaggttt     120
cattggctgt gttggtgacg ttgtcattgc aacagaatgg gggaaaggca ctgttctctt     180
tgaagtaggg tgagtcctca aaatccgtat agttggtgaa gccacagcac ttgagccctt     240
tcatggtggt gttccacact tgagtgaagt cttcctggga accataatct ttcttgatgg     300
caggcactac cagcaacgtc aggaagtgct cagccattgt ggtgtacacc aaggcgacca     360
cagcagctgc aacctcagca atgaagatga ggaggaggat gaagaagaac gtcacgaggg     420
cacacttgct ctcagtctta ncaccatagc agcccaggaa accaagagca aagaccacaa     480
cgccggctgc gatgaggaag tagcccacgn tgacaaactg catggcactg gacgacagtg     540
gcccgaagat cttcagaaag gatgccccat cgattgacac ccagatgccc actgccaaca     600
ggnctgcacc acacagaaag atgagcaaat tgaagaggat catcatggt                 649
```

<210> 926
<211> 341
<212> DNA
<213> Homo sapien

<400> 926
```
gggtcctcaa actctcgaat gtacggcgca atgccacaat aaggttgatt gtggtgtttt      60
tcatgtggca gtttctccag gggtggcagg tatggaatag ggtcacgggg ggcaaagagg     120
gccagaaggt tgggcggcag gaactgggtc atcttgccaa gtcgcgtagc gccctcctcg     180
ctctggcgtc tgtccggagg ctcgcggcgg ctgcggcagc ccctcagcaa caacaactcc     240
tgcttcggct tccactccgg gggcgtccac gtccgtctga ttccgtcgcc cgctaagcga     300
gcgcaccaga ccgctgctca gcgtcgacgc ggccgcgaat t                         341
```

<210> 927
<211> 431
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(431)
<223> n = A,T,C or G

<400> 927
```
gcggccgcca cgctggtttt gcatcttcag gagacgctcg tagccctcgc gcttctcctc      60
ggccaattcg cggaagaagt ggctcacgcc ttccagagcc acatcatcgc ggtcgaaata     120
gaagcccaga gagaggtagg tgtaggaggc ctgcaggtac aaattgacca ggctgttgac     180
ggctgcctcc acgtcggtgg aataattctg acgaatctgg agctcatgg ttggttggca     240
agaaggagct aaccacaaaa acggngctgg caggtcccag aagcaggaga tggccganaa     300
gatggtcccg gaggttgcaa gcggagagga aatcggaggg cggtcggagg ctggaagaga     360
```

```
gtccccggat ctgttccgtc caaacactgt tgaagcaaga gacagacccg cggtcgacgc          420
ggccgcgaat t                                                              431
```

<210> 928
<211> 538
<212> DNA
<213> Homo sapien

<400> 928
```
gtggcctgca aggccgcgga cagggcgagc accgagtcgt acattttgca gctcatcatc          60
cccgtgctct gcgtgacgca gtccatccac agccccttgt acatggcctg ggccgtgatg         120
atgttgtcac ccgcatagga gctcatctgc cactgcggga tggcggtgca ggccaccaga         180
cccacccagc ccagcagggc catggagaag cccagcaact gcaggcccga attggccatt         240
tccgccctca gaaaacactg ggggcgccgg gcgggagacc ctacagtaaa acaaacgaca         300
cttgggggggc agccccacaa aagaaaactt gaggtggagt tttccggtca cccaaagaga         360
caaaaggggt ttgggccagg tgaatgcaaa tcttgtcacc aaactacaca caaatcgacc         420
cctccagtga agcgatggcc tcgcggcaca gggagtagga tacgccggga gggtggttcc         480
agacaaaatt ggtggtcccc gaaggccagg cggttccctc cgggcgctct cggcgacc          538
```

<210> 929
<211> 69
<212> DNA
<213> Homo sapien

<400> 929
```
ctcctcgacc accagcttgc actggcagta gttgagcagc agcggcgtga tctgcttgtc          60
cagctggat                                                                 69
```

<210> 930
<211> 544
<212> DNA
<213> Homo sapien

<400> 930
```
gctttctcct tcttatagac gttccggacg ggcatgaccg gtccggtcag ctgggtggcc          60
agtttcagtt cttcagcaga actgtctccc ttcttggggg ccgagggctt cctgggggaag        120
aggatgagtt tggagcggta ctccttcagc cgctgcacgt tggcctgcag ggactccgtg         180
gacttgttcc gcctcctcgg atccacagaa atgccgatgg tccgggccac cttcttgtga         240
atgccggcca ccctgagctc ctccaggctg aagccgcggc cggcgcgcac cttcgtgtgg         300
taccgaaccg tggggcagcg cacgatgggc cggatgggac ccgacgcggg gcgcggggcg         360
atgcggcgcg ccttggcttg ccgggcctta cgtctgcgga tcttacgggc cggctggttg         420
aaccacgtgg ccacgcgccg ctgccagtcc ttgtggaagt ggggcttcaa gaccatgcca         480
ttccggctgg gcgccatggc tgcctacggc cctgcggctc ctgcggtcga cgcggccgcg         540
aatt                                                                      544
```

<210> 931
<211> 596
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(596)
<223> n = A,T,C or G

<400> 931
```
gttgctgcag tggcttgggc gtcaggaggc tcactgaggg ggccacatga ccccagccag          60
tgacagtgca gtggaggccg ttggggaagg aggcgttggc tgcagggagg cagatgggcc         120
```

```
ggatgtagcg ggagaaggtg atgggtctgc tgagttggag gagtgcaatg tcgccctggg      180
agccctcctg gaggtagctg gggtggggga tgatgtcctt cagggtgctg accttggcgt      240
cctcggagta ggagtctagc tggtgggccc ccagcttgac ctcataggct tccttgtggt      300
gctcgctggg gaagcagtga gcagctgaca gcacccactg ctcagacacg agagagccac      360
cacacacatg gacgccttca taggtgatgc tgacctgcca gggccactga ccggcgactg      420
cactgctgcc acctgtgatg cgtgcttggg gggccacacc gcagggagct tctgcccctt      480
ccgctcctgt ccccgaccgg agtaatccaa gatagagcag aatggccaca gcccccanct      540
gcccaggccc caggaccccc ttctgggcca tggcccagga caagggcccc tggggc          596
```

<210> 932
<211> 153
<212> DNA
<213> Homo sapien

<400> 932
```
tctgtgctgg ggtctgggct ccgtggagag atgtgtaggg gtaatgagaa attgatcagc       60
aatgagaggt ggactctgag ccacctccct gaccctgaat cattcaagcg aggagcagag      120
gagctcttga ctgggggacg gggatgtgag gat                                   153
```

<210> 933
<211> 112
<212> DNA
<213> Homo sapien

<400> 933
```
tcaaacttgc cattgttaaa agcagccaca ttttggacct gcagtttcct cagaaatagt       60
taggattctg tgtcgacgcg ccgcgaatt ccaccacact ggactagtgg at               112
```

<210> 934
<211> 74
<212> DNA
<213> Homo sapien

<400> 934
```
gtggccatcg agtccccatc ctggtcggcc acccggaaac gccgctcgtc ccgaggtcga       60
cgcggccgcg aatt                                                         74
```

<210> 935
<211> 380
<212> DNA
<213> Homo sapien

<400> 935
```
gcggccgcca tcttggtcct tttccaccat tttcagcccc tccagggctt ggaggacccg       60
gcgggccaca ctcttggagc ctcggctgaa gtggctgggc atgacgccgt ttctctgacg      120
tcccccatag atcttggtca tggagccaac cccagcgcca ccccggaggt acaggtgccg      180
cgctgtggaa gcagctcgcg tgtagaacca gttctcatcg tagggagcaa gctctttgtg      240
cttggccagc ttgacggtat ccacccattc ggggactttc agcttcccgg acttttgag      300
gaaggctgcc agagctctga cgaactcctg ctggttcacg tcttttacag taactccagg      360
catcgtgcgg cctccgcgcg                                                  380
```

<210> 936
<211> 155
<212> DNA
<213> Homo sapien

<400> 936
```
ctggcgcttt gaggatggtg tcctggaccc tgattacccc cgaaatatct ctgacggctt       60
```

263

```
cgatggcatc ccggacaacg tggatgcagc cttggccctc cctgcccata gctacagtgg    120
ccgggagcgg gtctacttct tcaaggggaa acagt                               155
```

<210> 937
<211> 213
<212> DNA
<213> Homo sapien

<400> 937
```
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg    60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg    120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct    180
ctcctgccgc cgccgtcgac gcggccgcga att                                 213
```

<210> 938
<211> 261
<212> DNA
<213> Homo sapien

<400> 938
```
gggtccgtca gggctgaaga cctgcccagg cacacaactc accacggccg gtagcccatt    60
ctcgcaggtg acattcttca tggggtccag tgacacctgg gggcccagct tgcagctgga    120
gatgtgggcc tctgtgccgg tgcagtccat ggagaatggc cagtagcgct gcttcctccg    180
tgaggcaaac attttgtaca ctttggtatt gtatgtcctc tccccaggga agccaaacat    240
gccgcagacc acgcgggaat t                                              261
```

<210> 939
<211> 228
<212> DNA
<213> Homo sapien

<400> 939
```
gctcaggctc caaagccagc aggaaagagg tagctcggga cgtggagccg ccgcccaggt    60
gcgccaggac cacctcggcc gtcaccttag ccaggtggct gcttaggtcc actgtgcgct    120
tcacgtcctc attgatcagc ggcggtgcct cggaggaggc gctgcccggc gccggggccc    180
aagtcccaag caacaggagc agaaacaagc cggcggctgg cgcgtcga                 228
```

<210> 940
<211> 97
<212> DNA
<213> Homo sapien

<400> 940
```
tccttcaagt atgcctgggt gctggacaag ctgaaggcgg agcgtgagcg cggcatcacc    60
atcgacatct ccctctggaa gttcgagacc accaagt                             97
```

<210> 941
<211> 200
<212> DNA
<213> Homo sapien

<400> 941
```
ggacccaggg gcacaggctc ccagatgata gcccctctct gaatgagcac ccaggcaaca    60
cagtccgggg ctgtgtgtag caaacctgtc agcagctgcc tcctgggaca accacccct    120
tacatgctat ctatctacca gacaaatgaa agctcttctt accccatctc ccaggcaccc    180
cccagcaagg gctctgaatt                                                200
```

<210> 942

```
<211> 209
<212> DNA
<213> Homo sapien

<400> 942
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg      60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg     120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct     180
ctcctgccgc gtcgacgcgg ccgcgaatt                                       209

<210> 943
<211> 130
<212> DNA
<213> Homo sapien

<400> 943
gtaaggagcc caagaaaaag tgatgccgcc tggcagactc gccatccccc aacgacacag      60
ggcaggacag cagaggacgt gctgggatta aacacattcc ccctcaaaaa aaaaaaaaaa     120
aaaaaaaaaa                                                           130

<210> 944
<211> 563
<212> DNA
<213> Homo sapien

<400> 944
gacagtccca gtactctttg ctcagctttc ggggccggcc tcgtttccgc ttcccgtgct      60
tgggatcccc cttcttgcag tcacgaaaac catcgctggg gaagagcttg ccatcagtgg     120
gatccaggtc cacgtcactt ccaccggagt ctgaggagtg ggagctccga gaagcaccag     180
tccctgcggt ggagacgtca gagctgccgg gggagggggc tcctgcgcca cagctgccgg     240
ggtggtaggg gctggcttgc tgaccgtcgt ccagcagctc ctgggcaaag gggctgccct     300
ggtcaaaggg ccctgggtct agggcctcct ggaaggccat gccatccttc tccagcagct     360
caatgatcca actgagctca tcagaagagc tggaagtgag gtctcgcagc tgggcatgga     420
gttggtcccc cagaggccca aagaccagac gcagctcctc aagggcacaa ttgcagaggg     480
tggcgccatc catgtcacat cgtgagaagt caatggcgct tgcgtcgtac ttgttcttct     540
ccacttggta gctgatccag tcc                                             563

<210> 945
<211> 637
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(637)
<223> n = A,T,C or G

<400> 945
gctgagcccc ttactgctcc tcccaccaat gggctccctc acacccagga caggactaag      60
agggagctgg cggagaatgg aggtgtcctg cagctggtgg gcccagagga gaagatgggc     120
ctcccgggct cagactcaca gaaagagctg gcctgaccac caggcacctc actggcactg     180
ctgacccatc ccagaaacac aatctcaggg acccgagcag ctccaaggac gagaggatac     240
agcagacaca acctaataga gaggcgcct gcagccttaa cctccacggc cttcgatact     300
tatgcaagcc tggtgttgct cctgtcctca gagtcatcct gcgctcatgc cttttcccga     360
atgggttcac ctctggcagt tgccgcttca gtcttggcct tagcctcatc ttgaagtggg     420
tagctggcgg gagagggtgg ctgcgccccc tgctggccct gaggctgcag agttgggagc     480
aggacacctc acctgagttt catttttttt catgtccaaa ccatgcacat actatagtcc     540
agaatcaaag cacttttgaa aagtggctgc atggcatcc tccagggccc aggaagttgc     600
```

```
attccaaggg cctgtttaca tggcagcana atccatc                              637
```

```
<210> 946
<211> 306
<212> DNA
<213> Homo sapien
```

```
<400> 946
ggcgcgggct cctctcccct cggctgcccg gatgcggagc aagcggctcc cggggaagct      60
ggcgcgtcgg ccggctaccg cggcgagcac ttaggaaggc gcggggtggc cagttcacag     120
ctgcccgctc caagtggggg gaggcgaatt ggagaggagg aggaggggag gaaaaagagc     180
aaaagtgggg gcgcttgcac cccttctctt ctcctcctgc aaagaaaagt ttccgggg tt    240
gaaactggcg agtctccgcg ccactgaagt ttccagtcag tttcgaggtc gacgcggccg     300
cgaatt                                                               306
```

```
<210> 947
<211> 71
<212> DNA
<213> Homo sapien
```

```
<400> 947
ggtccagagc tcccaggttt ccaggttgca gtccctccag tcccagagct cccagggttt      60
cggtttccag t                                                          71
```

```
<210> 948
<211> 575
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(575)
<223> n = A,T,C or G
```

```
<400> 948
gcggccgccc tttttttttt tttttgtcag caaaaatctt tttaataaga gagtaggatc      60
cagggttagt ttttgtagcc tcggctggcc cgtcggcctc tggcacgctc gaacttccgg     120
cccttggagc ggacgtaggg tttggtgtgg ctgtgcgggg ttcctggggc cttgccgaaa     180
tgccggtaca cctctcggcc cttgcgagga ccggagagca ggacagtgcc acagccctta     240
ggggagtcca gggccagctg gtcnaaagtg aggatcttgc cccctgccct gaggatgcgg     300
ctgcgggccc ggctggtcac gcgcagtgca cataccttca gttngggtac ctcctgaacc     360
cgcacatcat cagttatggt ccccacaacc acggccgtct tgttttcccg gccaggaagc     420
ttcatcttcc ggatcatccg ggaaagggac agaggcggcc ggttggtgcg actcataaac     480
aacctcttca acacaacctg gttgaatgtg gagttggttc ttctggccag aaacctgtat     540
aacttgacca acagcctcag gtagatatcc tggct                               575
```

```
<210> 949
<211> 294
<212> DNA
<213> Homo sapien
```

```
<400> 949
ggggtttcca cgtagcccac aatgcccaca accaccatgg gtggtgtctc tacaatggtc      60
acagcctcca ccacctcctt cttgttcacc ttggatcccg gcctgtcgac ttcccgcacg     120
atgtgagtca tgccagcctt gtatcccagg aaggctgtga ggtggaccgg cttggacggg     180
tcatccttag ggaagctctt caccttccca cgatgcctgc tgctgcgctt ccgaggcagg     240
aagccgaggg acccatgtct gggagcggag aactttctgt gagacatcac gcca          294
```

266

```
<210> 950
<211> 693
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(693)
<223> n = A,T,C or G

<400> 950
ggcccccaat tccagctgcc acaccaccca cggtgactgc attagttcgg atgtcataca        60
aaagctgatt gaagcaaccc tctacttttt ggtcgtgagc cttttgcttg gtgcaggttt       120
cattggctgt gttggtgacg ttgtcattgc aacagaatgg gggaaaggca ctgttctctt       180
tgaagtaggg tgagtcctca aaatccgtat agttggtgaa gccacagcac ttgagccctt       240
tcatggtggt gttccacact tgagtgaagt cttcctggga accataatct ttcttgatgg       300
caggcactac cagcaacgtc aggaagtgct cagccattgt ggtgtacacc aaggcgacca       360
cagcagctgc aacctcagca atgaagatga ggaggaggat gaagaagaac gtcacgaggg       420
cacacttgct ctcagtctta gcaccatagc agcccaggaa accaagagca aagaccacaa       480
cgccggctgc gatgaggaag tagcccacgt tgacaaactg catggcactg gacgacagtg       540
gcccgaagat cttcanaaag gatgccccat cgattgacac ccagatgccc actgccaaca       600
gggctgcacc acacagaaag atgagcaaat tgaagaggat catcatggtc ttaatgaagc       660
tgaagcactg catggnggct cctgttcagg gct                                     693

<210> 951
<211> 607
<212> DNA
<213> Homo sapien

<400> 951
gtggcctgca aggccgcgga cagggcgagc accgagtcgt acattttgca gctcatcatc        60
cccgtgctct gcgtgacgca gtccatccac agcccttgt acatggcctg ggccgtgatg        120
atgttgtcac ccgcatagga gctcatctgc cactgcggga tggcggtgca ggccaccaga       180
cccacccagc ccagcagggc catggagaag cccagcaact gcaggcccga attggccatt       240
tccgccctca gaaaacactg ggggcgccgg gcgggagacc ctacagtaaa acaaacgaca       300
cttggggggc agccccacaa aagaaaactt gaggtggagt tttccggtca cccaaagaga       360
caaaaagggt ttgggccagg tgaatgcaaa tcttgtcacc aaactacaca caaatcgacc       420
cctccagtga agcgatggcc tcgcggcaca gggagtagga tacgccggga gggtggttcc       480
agacaaaatt ggtggtcccc gaaggccagg cggttccctc cgggcgctct cggcgaccct       540
aggcaaacaa aaggtggagg ggccgtctgg gcgcgtttct gagcgccggc aagtcccaaa       600
gtatcct                                                                  607

<210> 952
<211> 372
<212> DNA
<213> Homo sapien

<400> 952
ggatgaggtc aacccgaagg ggtttcttga gaagcagtga cttcttctgg actttggttc        60
tcttctttgt cagccctttt tccttggagc cagtgtccac gaagaagagt tttttcatttg       120
gggcctctga caacaagcca ccgctcgtgc gctcctgtag ccgcacgtct tccaggaact       180
ggtcaacctc cagccccagc ggctcctgag caagccgccg ccagccccgc ttcttatttc       240
ttgggcctcg ccgccgccgc ctcagcgctg ggtccaccga agtgggccgc agccccagga       300
aaccagaatc ggcatcgctt ttcgagctgc gcttcccacc aacgccactg cctgtcgacg       360
cggccgcgaa tt                                                            372

<210> 953
<211> 275
```

```
<212> DNA
<213> Homo sapien

<400> 953
gccatctgct gtttttctc agcaccttcc gtcttttgtt caatacttga gacgaccctc      60
caagatgacc tacgggctcc tacaacattt ttataagcaa ctgagagaag attcctctcc     120
tcattggata attcagctcc ttgctcagtt acagacttca tgcaggctgc catgtcatca     180
tatcgctcag cctgctcggc cagtttggcc ttctgaacca gctcattttt atccatgact     240
ggatgttctg tgtccggtcg acgcggccgc gaatt                                275

<210> 954
<211> 189
<212> DNA
<213> Homo sapien

<400> 954
ggctcccact tccctgcttc gatggagaag gcgaggtggt ccagcaggtg ccgtaggtcc      60
ctgacccagc tgaccaccac cctgggccag cttctgacag tcccacctcc cagttgctgg     120
aggggtagtg gcctcacaga cggccctcct ctagatgcag tgggcccaga gtcgacgcgg     180
ccgcgaatt                                                             189

<210> 955
<211> 189
<212> DNA
<213> Homo sapien

<400> 955
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg      60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg     120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc gtcgacgcgg     180
ccgcgaatt                                                             189

<210> 956
<211> 216
<212> DNA
<213> Homo sapien

<400> 956
gcggccgcac gtgtaggcaa agaagcctgt gtccggcctc cagaccatgt tggcccgccc      60
attcccgctg taaccgacga cagccttcag acgcagccac ccaccgctgg cgggaggcgg     120
gcaagtgccc ttggcagagt gggggctgca gctgaccctg gcaggcgtga aggccttgca     180
ggaagccagg taggtggtgc gtggggcccc cgaatt                               216

<210> 957
<211> 62
<212> DNA
<213> Homo sapien

<400> 957
ccagtgggag gctcccaccc tggtagatga acagcccctg gagaactacc tggatatgga      60
gt                                                                    62

<210> 958
<211> 199
<212> DNA
<213> Homo sapien

<400> 958
```

```
ggattcggtc atattggaat tgctgttcct gatgtataca gtgcttgtaa aaggtttgaa         60
gaactgggag tcaaatttgt gaagaaacct gatgatggta aaatgaaagg cctggcattt        120
attcaagatc ctgatggcta ctggattgaa attttgaatc ctaacaaaat ggcaacctta        180
atgtagtgct gtgagaatt                                                      199
```

<210> 959
<211> 212
<212> DNA
<213> Homo sapien

<400> 959
```
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg         60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcgagagcg        120
tgtgtcgctg cagcgacgag gatggcactg gatggcttag agaaactagc accacaacct        180
ctcctgccgc cgcgtcgacg cggccgcgaa tt                                       212
```

<210> 960
<211> 177
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(177)
<223> n = A,T,C or G

<400> 960
```
gacattttat gacctctccc aatagggggca gaggtgagca cccctggtga aaagttaaga        60
ctcagtgagt ataaatacnc caagaagagc tgtggcttct ttcactggtg tcctcagaaa       120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt          177
```

<210> 961
<211> 490
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(490)
<223> n = A,T,C or G

<400> 961
```
gggcgtcctg gtgcttacca cctggaaact ggtgaggtgg tgggagaact cctggtggac        60
cctagtggaa gccttccagt aatttcttga agctgagcgc tcaggtgagt agggcgacat       120
ctggtggccg gttgttgaag gtcattgcag agaggaagga agccgaggag gggagcctgc       180
agtgagggcg tcctgggggtt ctncggttct caccaccctt gggccacgcc gtctagtcca       240
cacctgagga gttggtcagg tagaaggggc ggatgaccgt gcggaagccg ttgaantgcc       300
ctgccgggca ggggaaggag gaggtgctct tcgagctgtt ggtgtccagg cactgggaa        360
tcgcagcctt ccagccctcg aaatcggtga cgtctgccac gaagagccct cgcagagca        420
tcagggcttt gttttcgtag gcaatggtgc gatctgagcc gccagacttg gtgaggccca       480
ggacagggag                                                               490
```

<210> 962
<211> 159
<212> DNA
<213> Homo sapien

<220>

```
<221> misc_feature
<222> (1)...(159)
<223> n = A,T,C or G


<400> 962
gggtcggccc gggtggttgc ggccacagcg cagcggcgga gagcggcgcc cancatgacg        60
gcgatggcgg cgcgcgggcn gnggacagan agaagccggt gtaagctcgc gggttgctcc       120
ggagcgggcg ggggccggac gtcgacgcgg ccgcgaatt                              159

<210> 963
<211> 217
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(217)
<223> n = A,T,C or G


<400> 963
gggtagagaa ccctgcggct gcgctttcgg tgcccgcgag aggcgctggg gcgcccggca        60
ggggccgctg cgggctccnn gagagggtcg aaggtgaaga tctcaggacc ggagccccgc       120
cggggtcccg ggatggtgga gggggccggg gtcggggcct gcaggatggt catggtcggg       180
tggcagctgc gagagtgaca catggtgagc cgagcgt                                217

<210> 964
<211> 540
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(540)
<223> n = A,T,C or G


<400> 964
gtggcctgca aggccgcgga cagggcgagc accgagtcgt acattttgca gctcatcatc        60
cccgtgctct gcgtgacgca gtccatccac agccccttgt acatggcctg ggccgtgatg       120
atgttgtcac ccgcatagga gctcatctgc cactgcggga tggcggtgca ggccaccaga       180
cccacccagc ccagcagggc catggagaag cccagcaact gcaggcccga attggccatt       240
tccgccctca gaaaacactg ggggcgccgg gcgggagacc ctacagtaaa acaaacgaca       300
cttggggggc agccccacaa aagaaaactt gaggtggagt tttccggtca cccaaagaga       360
caaaaagggt ttgggccagg tgaatgcaaa tcttgtcacc aaactacaca caaatcgacc       420
cctccagtga agcgatggcc tcgcggcaca gggagtagga tacgccggga gggtggttcc       480
aganaaaatt ggtggtcccc gaaggccagg cggttccctc cgggcgctct cggcgaccct       540

<210> 965
<211> 321
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(321)
<223> n = A,T,C or G


<400> 965
gcccacagtg gcttgtttcc gcagtgcgcg gccgtcagca cccaactctg gtccaccagg        60
```

```
acacccgcgc agtggaacga gaggccgttg aagagcgaga cctgccaggg ctgcgagccg    120
cgcgcgcacg gggcgccata ggcttcgggg tccaagcgcg tgtcgttttg ggggagcagc    180
gccgcctctg cggcccagag ttgcgccatc agcagcggca gcagcttcgc cagagcccgg    240
gcgccagagg cggcggagag gtggaggtgc ggagctctca tggccaggat ctgggagtng    300
ccgatangaa ggagggaggg g                                             321
```

<210> 966
<211> 642
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(642)
<223> n = A,T,C or G

<400> 966
```
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg     60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa    120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt    180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccanaa    240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat    300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat    360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg    420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct    480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt    540
cactgtcgat ggctgcacga gtcacaccgg agcctggggc aagacagtga ttgaatacaa    600
aaccaccaag acctcccgcc tgcccatcat cgatgtggcc cc                       642
```

<210> 967
<211> 650
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(650)
<223> n = A,T,C or G

<400> 967
```
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg     60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa    120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt    180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa    240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat    300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat    360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg    420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct    480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt    540
cactgtcgat ggctgcacga gtcacaccgg nagcctgggg caagacagtg attgaataca    600
aaaccaccaa gaccttccgc ctgcccatca tcgatgtggc ccccttggac              650
```

<210> 968
<211> 629
<212> DNA
<213> Homo sapien

<220>

```
<221> misc_feature
<222> (1)...(629)
<223> n = A,T,C or G

<400> 968
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg        60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa       120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt       180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa       240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat       300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat       360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg       420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct       480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt       540
cactgtcgat ggctgcacga gtcacaccgg nagcctgggg caagacagtg attgaataca       600
aaaccaccaa gacctcccgc ctgcccatc                                         629

<210> 969
<211> 222
<212> DNA
<213> Homo sapien

<400> 969
gaatgtcagg ggtgttgggg gctttggctg ggtcctgggt cttcgtgtag agacctggag        60
gcgcttggtt cttggggttc tccaggattc cagcctcgta gctgatgtgc atgaggttct       120
catccatgct ccacgggttc ttgggagtga ccgggatggg aatcccgtgt tgctttgcgt       180
actccatcag gtcattgcgg cccttgaacc ggttgtagaa tt                         222

<210> 970
<211> 79
<212> DNA
<213> Homo sapien

<400> 970
gcaggggccg cctggccttg ctccgctcca cgaggaggcc gccaaccgca gggccgcgac        60
acggacggga agcaacgga                                                      79

<210> 971
<211> 111
<212> DNA
<213> Homo sapien

<400> 971
ggaaaatgca tctaccccac ccaaccagca gcctcacttt aggctgcctt gtcccgggcg        60
ccccattcgt cagccccacg cctcctccag gatccgggcc cagctcgaat t               111

<210> 972
<211> 609
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(609)
<223> n = A,T,C or G

<400> 972
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg        60
```

272

```
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa          120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt          180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa          240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat          300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat          360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg          420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct          480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt          540
cactgtcgat ggctgcacga gtcacaccgg nagcctgggg caagacagtg attgaataca          600
aaaccacca                                                                  609
```

```
<210> 973
<211> 311
<212> DNA
<213> Homo sapien
```

```
<400> 973
ggggtttcca cgtagcccac aatgcccaca accaccatgg gtggtgtctc tacaatggtc           60
acagcctcca ccacctcctt cttgttcacc ttggatcccg gcctgtcgac ttcccgcacg          120
atgtgagtca tgccagcctt gtatcccagg aaggctgtga ggtggaccgg cttggacggg          180
tcatccttag ggaagctctt caccttccca cgatgcctgc tgctgcgctt ccgaggcagg          240
aagccgaggg acccatgtct gggagcggag aactttctgt gagacatcac gcgtcgacgc          300
ggccgcgaat t                                                               311
```

```
<210> 974
<211> 180
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(180)
<223> n = A,T,C or G
```

```
<400> 974
gaggcggaga ggatcatgtc cgggaactgc ggggtagtag cgatctgggt tacccagccg           60
ttgtggccct tgagggtgcc acgaagggtc atctgctcag tcatggcggc ggcnagagcg          120
tgtgtcnctg cancgacnag gatggcactg gatggcttag anaaactagc accacgtcga          180
```

```
<210> 975
<211> 187
<212> DNA
<213> Homo sapien
```

```
<400> 975
gcaccagccc cggggactat gtgctcagcg tctcagagaa ctcgcgcgtc tcccactaca           60
tcatcaacag cagcggcccg cgccgccggg tgccaccgtc gcccgcccag cctccgcccg          120
gggtgagccc ctccagactc cgaataggag atcaagagtt tgattcattg cctgctttac          180
tggaatt                                                                    187
```

```
<210> 976
<211> 59
<212> DNA
<213> Homo sapien
```

```
<400> 976
ctggttccgc tgcatggacc tggacgggga cggcgccctg tccatgttcg agctcgagt            59
```

```
<210> 977
<211> 66
<212> DNA
<213> Homo sapien

<400> 977
ggtccagagc tcccaggttt ccaggttgca gtccctccag tcccagagct cccagggttt      60
cggttt                                                                  66

<210> 978
<211> 114
<212> DNA
<213> Homo sapien

<400> 978
ggagctgatg cgggaaccgg gcccactcgt gtaggagcgg ctgctgaagg cccggggggcc     60
agaggtggac accttgtagg acttctgggt cacccgtcga cgcggccgcg aatt           114

<210> 979
<211> 177
<212> DNA
<213> Homo sapien

<400> 979
gacattttat gacctctccc aataggggca gaggtgagca cccctggtga aaagttaaga      60
ctcagtgagt ataaatacgc caagaagagc tgtggcttct ttcactggtg tcctcagaaa     120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt        177

<210> 980
<211> 188
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(188)
<223> n = A,T,C or G

<400> 980
ggagctgatg cgggaaccgg gcccactcgt gtaggagcgg ntgctgaagg cccggggggcc     60
agaggtggac accttgtagg acttctgggt caccctgatg gacatggtag aggctggagt     120
ggaggcaggc gggccgaacc aggcggagat cctagaagga gcggagaagg tcgacgcggc     180
cgcgaatt                                                               188

<210> 981
<211> 184
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(184)
<223> n = A,T,C or G

<400> 981
gggccccagg aggccgggtg ggcacaggcc atggcgaggg tggggcacaa gagccccaga      60
ccccggcggc tttgcactga tgggctgcgg ntgggcacag gccatagtga gggggggcatg    120
agagccccag accgggcggc tttgcactga tgagctgcag ggcaggtcga cgcggccgcg     180
```

aatt   184

<210> 982
<211> 98
<212> DNA
<213> Homo sapien

<400> 982
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac cgaaccctga accctacggt   60
cccgacccgc gggcgaggcc gggtacctgg gctgggat   98

<210> 983
<211> 425
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(425)
<223> n = A,T,C or G

<400> 983
gccggatatg gtcctgccgg tggcagccta tgggctgatc ctgatggcca tgctgtggcg   60
cggcctggcc cagggcggga gtgccggctg gggcgcgctg ctcttcacgc tctctgatgg   120
cgtgctggcc tgggacacct tcgcccagcc cctgccccat gcccnctgg tgatcatgac   180
cacctactat gctgcccagc tcctcatcac actgtcagcc ctcaggagcc cggtgcccaa   240
gactgactga ctagggagct tgaagggccg gtgttcaggc cctctcctcc tgcaaggacc   300
tgggcctccc agcccagccc agcctgagaa ataccctcag cagcgaagct tcctgacgcc   360
tgtctgcagg cgccgctgcc gccgtcgctt ctggctgaag acgtttgagg acgatttgcg   420
gaatt   425

<210> 984
<211> 148
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(148)
<223> n = A,T,C or G

<400> 984
tcctnagcca gggagacagg gaccaggcag cacaggcctg ccagcaggag gatgccccac   60
gagacagaag acggcattgt cgattcactg tcccaggtca gtggtgggtc gacgcggccg   120
cgaattccac cacactggac tagtggat   148

<210> 985
<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 985
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg   60

275

```
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa     120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt     180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccanaa     240
gaactggtac atcancaaga accccaagga caagaggcat gtctggttcg gcgagagcat     300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat     360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc canaacatca cctaccactg     420
caagaacagc gtggcctaca tggaccanca nactggcaac c                        461
```

```
<210> 986
<211> 138
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(138)
<223> n = A,T,C or G


<400> 986
gagcggctgc tgaaggcccg ggggccagag gtggacacct tgtangactt ctgggtcacc     60
ctgatggaca tggtagaggc aggagtggag gcaggcgggc cgaaccaggc ggagatccta     120
gaaggagcgg aggtcgnc                                                  138
```

```
<210> 987
<211> 555
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(555)
<223> n = A,T,C or G


<400> 987
gcggccgccc tttttttttt ttttttttag tggtataact atatttattg tgcctgagag     60
gcaaggtgag ggaaaaatct caacagaagc aagtttgggg aaaatctgga gtccccagta     120
aaaagcagga aggtctctgc tgtactcatc acagaatggg agagagggct ctcaatagat     180
cattcccttt gtttctcccc tgggcttctt gagcttctcg aagttcttca ggatgatgtc     240
atataacaca gcataagcat tgcggatctc catgaccatc agccggatgt ccgggtactc     300
tgcctcatcc agctcgtgca ccagctgccg ataatcaccc acatggggct gcttggctgc     360
tttagtcact gcatcaccac gctcagagaa atacttagag atttgagtgt ggaagccttc     420
tancttggtg tggaggctgg tcatcagctc aaacaccttc tcctggacag ccactccaaa     480
attgttacca tcctcaatcc gaggtatctg cagctgcaac caggtggtga ccaggttgag     540
ctgctcaatg acatc                                                    555
```

```
<210> 988
<211> 318
<212> DNA
<213> Homo sapien


<400> 988
gacggcgcgg gcgacctacg aacagctttg aggaagcccc gacagtggcg gcgtccagtg     60
cctccgaggg cggcgaccgc ggctccgcag cctctcccag ccgctccgcc cggttccggg     120
gagtcggtcg ggacaaaatg gcctcccctc cccctcagg gcttctcggc cgggacgctc      180
ccacgggcga gcaagcctgc tctgccgtcg aggaggcgca gcgggcgtga ggacagtctc     240
tctcccgagc ggaaactccc tgctagcacg cggcgagggc agcgaagaag gacccctaag     300
tcgacgagct cagttaca                                                 318
```

276

<210> 989
<211> 177
<212> DNA
<213> Homo sapien

<400> 989
gacattttat gacctctccc aatagggggca gaggtgagca cccctggtga aaagttaaga   60
ctcagtgagt ataaatacgc caagaagagc tgtggcttct ttcactggtg tcctcagaaa   120
ggctgtgagc agtgttggtg gcatacctgt cacagcatct agcaaagcac ctgaatt   177

<210> 990
<211> 144
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(144)
<223> n = A,T,C or G

<400> 990
gtgagcaccc ntggtgaaaa gttaagactc agtgagtata aatacgccaa gaagagctgt   60
ggcttctttc actggtgtcc tcagaaaggc tgtgagcagt gttggtggca tacctgtcac   120
agcatctagc aaagcacctg aatt   144

<210> 991
<211> 659
<212> DNA
<213> Homo sapien

<400> 991
ggtggacacc accctcaaga gcctgagcca gcagatcgag aacatccgga gcccagaggg   60
cagccgcaag aaccccgccc gcacctgccg tgacctcaag atgtgccact ctgactggaa   120
gagtggagag tactggattg accccaacca aggctgcaac ctggatgcca tcaaagtctt   180
ctgcaacatg gagactggtg agacctgcgt gtaccccact cagcccagtg tggcccagaa   240
gaactggtac atcagcaaga accccaagga caagaggcat gtctggttcg gcgagagcat   300
gaccgatgga ttccagttcg agtatggcgg ccagggctcc gaccctgccg atgtggccat   360
ccagctgacc ttcctgcgcc tgatgtccac cgaggcctcc cagaacatca cctaccactg   420
caagaacagc gtggcctaca tggaccagca gactggcaac ctcaagaagg ccctgctcct   480
ccagggctcc aacgagatcg agatccgcgc cgagggcaac agccgcttca cctacagcgt   540
cactgtcgat ggctgcacga gtcacaccgg agcctggggc aagacagtga ttgaatacaa   600
aaccaccaag acctcccgcc tgcccatcat cgatgtggcc cccttggacg ttggtgccc   659

<210> 992
<211> 226
<212> DNA
<213> Homo sapien

<400> 992
tccgctgcac tgggtttgcc ggattcttgg gcttcccaca tactgcttca cattcaggaa   60
gtttatctcc aacagcctta tttatccact gcttcttatc atttaaggtg tatactccat   120
ctccttctgt gcgcagtttg tagtagttct tacactggta gcgaaccgag tgctccacat   180
agccatgtgc aatctcgggg ggcttcgggc agccgtcatc tgcgat   226

<210> 993
<211> 160
<212> DNA
<213> Homo sapien

```
<220>
<221> misc_feature
<222> (1)...(160)
<223> n = A,T,C or G

<400> 993
ctcgtgtnng agcgnctgct gaaggcccgg gggccanagg nggacacctt gtacgacttc      60
tgggtcaccc tgatggacat ggtanangct ggagtggagg caggcgggcc gaaccaggcg     120
gagatcctag aaggagcgga ggtcgacgcg gccgcgaatt                           160

<210> 994
<211> 622
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(622)
<223> n = A,T,C or G

<400> 994
nagcctganc cagcagatcg agaacatccg gagcccagag ggcagccgca agaacccgc      60
ccgcacctgc cgtgacctca agatgtgcca ctctgactgg aagagtggag agtactggat     120
tgaccccaac caaggctgca acctggatgc catcaaagtc ttctgcaaca tggagactgg     180
tgagacctgc gtgtacccca ctcagcccag tgtggcccag aagaactggt acatcagcaa     240
gaaccccaag gacaagaggc atgtctggtt cggcgagagc atgaccgatg gattccagtt     300
cgagtatggc ggccagggct ccgaccctgc cgatgtggcc atccagctga ccttcctgcg     360
cctgatgtcc accgaggcct cccagaacat cacctaccac tgcaagaaca gcgtggccta     420
catggaccag cagactggca acctcaagaa ggccctgctc ctccagggct ccaacgagat     480
cgagatccgc gccgagggca acagccgctt cacctacagc gtcactgtcg atggctgcac     540
gagtcacacc ggagcctggg gcaagacagt gattgaatac aaaaccacca agacctcccg     600
cctgcccatc atcgatgtgg cc                                             622

<210> 995
<211> 158
<212> DNA
<213> Homo sapien

<400> 995
aataagattt tgccagaggg gaaggctcga ttgtgctgtt aataacttaa taatgacaaa      60
ataatgaggt gtatatgctt tacatgcaat gttatatagt gaattgttct gattcttaat     120
tgtaagtctg gtttttttat ctgtaagata attgtgtg                            158

<210> 996
<211> 295
<212> DNA
<213> Homo sapien

<400> 996
cggccgcgtc gactctcgga gcggagacgg caaatggcgg acttcgacac ctacgacgat      60
cgggcctaca gcagcttcgg cggcggcaga gggtcccgcg gcagtgctgg tggccatggt     120
tcccgtagcc agaaggagtt gcccacagag cccccctaca cagcatacgt aggaaatcta     180
cctttcaata cggttcaggg cgacatagat gctatcttta aggatctcag cataaggagt     240
gtacggctag tcagagacaa agacacagat aaatttaaag gattctgcta tgtag          295

<210> 997
<211> 125
```

<212> DNA
<213> Homo sapien

<400> 997
cggccgccct tttttttttt tttttttaagg tttttttggct gtaagtttat tcaatgcaaa   60
agaatcctct ccaattttac tgaggtggct gaccacgtcc acgaccaaat ccgcctctaa   120
actgg   125

<210> 998
<211> 152
<212> DNA
<213> Homo sapien

<400> 998
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccggggggcca   60
gaggtggaca ccttgtagga cttctgggtc accctgatgg acatggtaga ggctggagtg   120
gaggcaggcg ggccgaacca ggcggagatc ct   152

<210> 999
<211> 119
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(119)
<223> n = A,T,C or G

<400> 999
taaagcaacc actaaaccac ctncagcang agaaagcagc agagagctct tcanacagct   60
cagactctga cagctnngag gatgatgaag ctccttctaa gccagctggt accaccaag   119

<210> 1000
<211> 209
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(209)
<223> n = A,T,C or G

<400> 1000
ccctcnngag gcggagagga tcatgtccgg gaactgcggg gtagtagcga tctgggttac   60
ccagccgttg tggcccttga gggtgccacg aagggtcatc tgctcagtca tggcggcggc   120
gagagcgtgt gtcgctgcag cgacgaggat ggcactggat ggcttagaga aactagcacc   180
acaacctctc ctgcgtcgac gcggccgcg   209

<210> 1001
<211> 390
<212> DNA
<213> Homo sapien

<400> 1001
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc   60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag   120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc   180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag   240

279

```
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg      300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc      360
cagctgacct tcctgcgcct gatgtccacc                                       390
```

<210> 1002
<211> 613
<212> DNA
<213> Homo sapien

```
<400> 1002
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa     600
accaccaaga cct                                                        613
```

<210> 1003
<211> 639
<212> DNA
<213> Homo sapien

```
<400> 1003
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa     600
accaccaaga cctcccgcct gcccatcatc gatgtggcc                            639
```

<210> 1004
<211> 85
<212> DNA
<213> Homo sapien

```
<400> 1004
ccgttattcg tcgtggctca agcccggcca cgccgcccca agggctcctc ccgacctccc      60
ggcctgccgc tccggccact gcggg                                            85
```

<210> 1005
<211> 636
<212> DNA
<213> Homo sapien

```
<400> 1005
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
```

280

```
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa     600
accaccaaga cctcccgcct gcccatcatc gatgtg                                636
```

<210> 1006
<211> 629
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature ·
<222> (1)...(629)
<223> n = A,T,C or G

<400> 1006
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaangc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa     600
accaccaaga cctcccgcct gcccatcat                                        629
```

<210> 1007
<211> 575
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(575)
<223> n = A,T,C or G

<400> 1007
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag     120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc     180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag     240
aactggtnca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg     300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc     360
cagctgacct tnctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc     420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc     480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc     540
actgtcgatg gctgcacgag tcacaccgga gcctg                                 575
```

<210> 1008
<211> 62
<212> DNA
<213> Homo sapien

281

```
<400> 1008
cgatggagcg tgggtaggga gggtccacag tgtccactcg ccgtgtgcga aggttgactc    60
gg                                                                    62

<210> 1009
<211> 180
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(180)
<223> n = A,T,C or G

<400> 1009
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccggggggcca    60
gaggtggaca ccttgtagga cttctgggtc accctgatgg acatggtaga ggcaggagtg   120
gaggcaggcg ggccgaacca ggcggagatc ctanaaggag cggaggtcga cgcggccgcg   180

<210> 1010
<211> 169
<212> DNA
<213> Homo sapien

<400> 1010
gaggcggcac aggtcacgca tggccagcac ggcagccatg gcgctgcgct cgctcatgtt    60
tctcgccagg taggtctggg ccaggttctt gagtttgaag ctgctggccc cgggcacacg   120
ctcccggatg agaggcaggg cagccaggaa gcccgagatg gcctcctgg               169

<210> 1011
<211> 170
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(170)
<223> n = A,T,C or G

<400> 1011
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccggggggcca    60
gaggtggaca ccttgtanna cttctgggtc accctgatgg acatggtaga ggctggagtg   120
gaggcaggcg ggccgaacca ggcggagatc ctagaaggag cggaggtcga               170

<210> 1012
<211> 344
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(344)
<223> n = A,T,C or G

<400> 1012
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc    60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag   120
```

```
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc    180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgg nccanaanaa    240
ctggnncatc ngcangaacc ccnnggacan gaggcntgtc tggttcggcg agagcatgac    300
cnatggattc canttnnagt atggnggcca gggctccgac cctg                     344
```

<210> 1013
<211> 157
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(157)
<223> n = A,T,C or G

<400> 1013
```
atagaacccc gcccgcacct nncgtgacct caagatgtgc cactctgact ggaagagtgg     60
agagtactgg attgacccca accaaggctg caacctggat gccatcaaag tcttctgcaa    120
catgganact ggtganncct gcgtgtaccc cactcag                            157
```

<210> 1014
<211> 621
<212> DNA
<213> Homo sapien

<400> 1014
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc     60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag    120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc    180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag    240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg    300
accgatggat ccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc    360
cagctgacct cctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc    420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc    480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc    540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa    600
accaccaaga cctcccgcct g                                             621
```

<210> 1015
<211> 104
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(104)
<223> n = A,T,C or G

<400> 1015
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc     60
agccgcaaga accccgcccg cacctgccgt nctcnagatg tgcc                     104
```

<210> 1016
<211> 101
<212> DNA
<213> Homo sapien

<400> 1016

```
gctgaccagg cggaaagagg agctgcccat gaagggggc accctgggcg ggatccctgg         60
ggagcccgcc gtggaccacc gagatgtgga tgagctgctg g                          101
```

<210> 1017
<211> 172
<212> DNA
<213> Homo sapien

<400> 1017
```
acattttatg acctctccca atagggggcag aggtgagcac ccctggtgaa aagttaagac      60
tcagtgagta taaatacgcc aagaagagct gtggcttctt tcactggtgt cctcagaaag      120
gctgtgagca gtgttggtgg catacctgtc acagcatcta gcaaagcacc tg              172
```

<210> 1018
<211> 637
<212> DNA
<213> Homo sapien

<400> 1018
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag      120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc      180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag      240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg      300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc      360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc      420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc      480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc      540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa      600
accaccaaga cctcccgcct gcccatcatc gatgtgg                               637
```

<210> 1019
<211> 623
<212> DNA
<213> Homo sapien

<400> 1019
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc      60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag      120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc      180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag      240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg      300
accgatggat tccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc      360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc      420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc      480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc      540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa      600
accaccaaga cctcccgcct gcc                                              623
```

<210> 1020
<211> 233
<212> DNA
<213> Homo sapien

<400> 1020
```
ggtagagaac cctgcggctg cgctttcggt gcccgcgaga ggcgctgggg cgcccggcag      60
gggccgctgc gggctccggg agagggtcga aggtgaagat ctcaggaccg gagccccgcc      120
ggggtcccgg gatggtggag ggggccgggg tcggggcctg caggatggtc atggtcgggt      180
```

```
ggcagctgcg agagtgacac atggtgagcc gagcggaggt cgacgcggcc gcg                233
```

<210> 1021
<211> 180
<212> DNA
<213> Homo sapien

<400> 1021
```
gagctgatgc gggaaccggg cccactcgtg taggagcggc tgctgaaggc ccggggggcca    60
gaggtggaca ccttgtagga cttctgggtc accctgatgg acatggtaga ggcaggagtg    120
gaggcaggcg ggccgaacca ggcggagatc ctagaaggag cggaggtcga cgcggccgcg    180
```

<210> 1022
<211> 636
<212> DNA
<213> Homo sapien

<400> 1022
```
gtggacacca ccctcaagag cctgagccag cagatcgaga acatccggag cccagagggc    60
agccgcaaga accccgcccg cacctgccgt gacctcaaga tgtgccactc tgactggaag    120
agtggagagt actggattga ccccaaccaa ggctgcaacc tggatgccat caaagtcttc    180
tgcaacatgg agactggtga gacctgcgtg taccccactc agcccagtgt ggcccagaag    240
aactggtaca tcagcaagaa ccccaaggac aagaggcatg tctggttcgg cgagagcatg    300
accgatggat ccagttcga gtatggcggc cagggctccg accctgccga tgtggccatc    360
cagctgacct tcctgcgcct gatgtccacc gaggcctccc agaacatcac ctaccactgc    420
aagaacagcg tggcctacat ggaccagcag actggcaacc tcaagaaggc cctgctcctc    480
cagggctcca acgagatcga gatccgcgcc gagggcaaca gccgcttcac ctacagcgtc    540
actgtcgatg gctgcacgag tcacaccgga gcctggggca agacagtgat tgaatacaaa    600
accaccaaga cctcccgcct gcccatcatc gatgtg                             636
```

<210> 1023
<211> 162
<212> DNA
<213> Homo sapien

<400> 1023
```
aggcggagag gatcatgtcc gggaactgcg gggtagtagc gatctgggtt acccagccgt    60
tgtggccctt gaggtgcca cgaagggtca tctgctcagt catggcggcg gcgagagcgt    120
gtgtcgctgc agcgacgagg atggcacgtc gacgcggccg cg                      162
```

<210> 1024
<211> 124
<212> DNA
<213> Homo sapien

<400> 1024
```
tccactagtc cagtgtggtg gaattcgcgg ccgcgtcgac gccgagcagg aggcgccatc    60
atgggagtgg acatccgcca taacaaggac cgaaaggttc ggcgcaagga gcccaagagc    120
cagg                                                                124
```

<210> 1025
<211> 635
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(635)

```
<223> n = A,T,C or G

<400> 1025
gcccccaatt ccagctgcca caccacccac ggtgactgca ttagttcgga tgtcatacaa      60
aagctgattg aagcaaccct ctactttttg gtcgtgagcc ttttgcttgg tgcaggtttc     120
attggctgtg ttggtgacgt tgtcattgca acagaatggg ggaaaggcac tgttctcttt     180
gaagtagggt gagtcctcaa aatccgtata gttggtgaag ccacagcact tgagcccttt     240
catggtggtg ttccacactt gagtgaagtc ttcctgggaa ccataatctt tcttgatggc     300
aggcactacc agcaacgtca ggaagtgctc agccattgtg gtgtacacca aggcgaccac     360
agcagctgca acctcagcaa tgaagatgag gaggaggatg aagaagaacg tcacgagggc     420
acacttgctc tcagtcttag caccatagca gcccaggaaa ccaagagcaa agaccacaac     480
gccggctgcg atgaggaagt agcccacgtt gacaaactgc atggcactgg acgacagtgg     540
cccgaagatc ttcagaaagg atgccccatc gattgacacc cagatgccca ctgccaacag     600
ggctgcacca cacagaanga tgagcaaatt gaaga                                635

<210> 1026
<211> 355
<212> DNA
<213> Homo sapien

<400> 1026
ccatctgctg tttttttctca gcaccttccg tcttttgttc aatacttgag acgaccctcc     60
aagatgacct acgggctcct acaacatttt tataagcaac tgagagaaga ttcctctcct     120
cattggataa ttcagctcct tgctcagtta cagacttcat gcaggctgcc atgtcatcat     180
atcgctcagc ctgctcggcc agtttggcct tctgaaccag ctcattttta tccatgactg     240
gatgttctgt gtccggagtg ggtggtggcg gcggacggac gggctcagca gtctctgggc     300
ggcggcggcg gcagcagcgg cgaggctgag actctgtccc gtcgacgcgg ccgcg          355

<210> 1027
<211> 148
<212> DNA
<213> Homo sapien

<400> 1027
tgccaccctg gtgcccatga ctgtggcctt ggtgcccagg aggggccaga gctggtgggt     60
gctggctgtt cttctccctc tggccctgag cccctggctc tggagctgcc tgtaggggct    120
gaagggccat cccactgcca ttctccgg                                        148

<210> 1028
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

<400> 1028
ggcgtcctgg tgcttaccac ctggaaactg gtgaggtggt gggagaactc ctggtggacc     60
ctagtggaag ccttccagta atttcttgaa gctgagcgct caggtgagta gggcgacatc    120
tggtggccgg ttgttgaagg tcattgcaga gaggaaggaa gccgaggagg ggagcctgca    180
gtgagggcgt cctggggttc tccggttctc accacccttg gccacgccg tctagtccac     240
acctgaggag ttggtcaggt agaaggggcg gatgaccgtg cggaagccgt tgaagtgccc    300
tgccgggcag gggaaggagg aggtgctctt cgagctgttg gtgtccaggg cactgggaat    360
cgcagccttc cagccctcga aatcggtgac gtctgccacg aagagccctt cgcagagcat    420
cagggctttg ttttcgtang caatggtgcg atctgagccg ccagacttgg tgaggcccca    479
```

<210> 1029
<211> 64
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(64)
<223> n = A,T,C or G

<400> 1029
gcgtnnatgt agttcttgag cacctcggga atgggcccct cggtcacggc tggcaccgcc   60
tggg   64

<210> 1030
<211> 531
<212> DNA
<213> Homo sapien

<400> 1030
cctgtcagag tggcactggt agaagttcca ggaaccctga actgtaaggg ttcttcatca   60
gtgccaacag gatgacatga aatgatgtac tcagaagtgt cctggaatgg ggcccatgag   120
atggttgtct gagagagagc ttcttgtcct acattcggcg ggtatggtct tggcctatgc   180
cttatggggg tggccgttgt gggcggtgtg gtccgcctaa aaccatgttc ctcaaagatc   240
atttgttgcc caacactggg ttgctgacca gaagtgccag gaagctgaat accatttcca   300
gtgtcatacc cagggtgggt gacgaaaggg gtcttttgaa ctgtggaagg aacatccaag   360
atctctggtc catgaagatt ggggtgtgga agggttacca gttggggaag ctcgtctgtc   420
tttttccttc caatcagggg ctcgctcttc tgattattct tcagggcaat gacataaatt   480
gtatattcgg ttcccggttc caggccagta atagtagcct ctgtgacacc a   531

<210> 1031
<211> 518
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(518)
<223> n = A,T,C or G

<400> 1031
cctgggtggt ggagcgaatg ggccgattcc accggatcct ggagcctggt ttgaacatcc   60
tcatccctgt gttagaccgg atccgatatg tgcagagtct caaggaaatt gtcatcaacg   120
tgcctgagca gtcggctgtg actctcgaca atgtaactct gcaaatcgat ggagtccttt   180
acctgcgcat catggaccct tacaaggcaa gctacggtgt ggaggaccct gagtatgccg   240
tcacccagct agctcaaaca accatgagat cagagctcgg caaactctct ctggacaaag   300
tcttccggga acggagtcc ctgaatgcca gcattgtgga tgccatcaac caagctgctg   360
actgctgggg tatccgctgc ctccgttatg agatcaagga tatccatgtg ccaccccggg   420
tgaaagagtc tatgcagatg cangtggagg cagagcggcg gaaacgggcc acagttctag   480
agtctgaggg gacccgagag tcggccatca atgtggca   518

<210> 1032
<211> 116
<212> DNA
<213> Homo sapien

<400> 1032
aaatatttat gtggaattaa ttaaaggtag ttggctatat cgctatcatt tcattctttt   60

```
gacattatgt gaatatttta ctggaaaata agactaataa attgttaaaa gttttt          116
```

```
<210> 1033
<211> 241
<212> DNA
<213> Homo sapien
```

```
<400> 1033
caagggtcat gatggcagga gtaatcagag gtgttcttgt gttgtgataa gggtggagag      60
gttaaaggag ccacttatta gtaatgttga tagtagaatg atggctaggg tgacttcata     120
tgagattgtt tgggctactg ctcgcagtgc gccgatcagg gcgtagtttg agtttgatgc     180
tcaccctgat cagaggattg agtaaacggc taggctagag gtggctagaa taaataggag     240
g                                                                     241
```

```
<210> 1034
<211> 234
<212> DNA
<213> Homo sapien
```

```
<400> 1034
ccacagctgg gcgcttcacc cagtggtact ttggtgccta ctccattgtg gcgggcgtgt      60
ttgtgtgcct gctggagtac ccccggggga agaggaagaa gggctccacc atggagcgct     120
ggggacagaa gcacatgacc gccgtggtga agctgttcgg gccctttacc aggaattact     180
atgttcgggc cgtcctgcat ctcctgctct cggtgcccgc cggcttcctg ctgg           234
```

```
<210> 1035
<211> 434
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(434)
<223> n = A,T,C or G
```

```
<400> 1035
gtacaagctt tttttttttt tttttttttt ttttttttng gntacggnag cacttttatt      60
tttccttaca caatgacgtg ttgctggggc ctaatgttct cacataacag tanaaaacca     120
aaatttgttg tcatntnttc aaagaatcga naattgcgta caaaaaaaac cttacataaa     180
ttaanaatga atacatttac aggcgtaaat gcaaaccgnt tccaactnaa agcaagtaac     240
agcccacggn gttntggcca aagacatnag ntaanaaagg aaactgggtc ctacggcttg     300
gactttncaa ccctgacaga cccgcaagac aaaacaactg·gttnttgcca gcctntanag     360
aaatcccana acactnagcc ctgacacgtt aataccctgc acanatcana ggctgntggc     420
cacacanact cacc                                                       434
```

```
<210> 1036
<211> 294
<212> DNA
<213> Homo sapien
```

```
<400> 1036
aaagccatgg gaacccagat caccagatcc ggagcctgac tctagcccct gagccacctg      60
ttgccctaac accctgtctg actctctccc gctgcagcag ccagtccctc ctgcactcca     120
gcaactccag ccatcagtca tcttccagat ccttggaaag tccagccaac tcttcctcca     180
gcctccacag ccttggctca gtgtccctgt gtacaagacc cagtgacttc caggctccca     240
gaaaccccac cctaaccatg ggccaaccca gaacacccca ctctccacca ctgg           294
```

```
<210> 1037
```

<210> 547
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(547)
<223> n = A,T,C or G

<400> 1037
aaagatatga acagcttaat tttccgtgtg attatctaat taaaaaagaa aaacnnaaca   60
agcnnaatgt tcaagttaaa aaaaaaacat accgggtgag caatgcacta aaattatcca   120
catgaaaaca aatggtctgt aatcttataa accaacatag catttcactg tcaacaatgt   180
gaaaatttaa tatcttctca aacaggcata agatgaagaa gtgctatttt ttaattgtaa   240
aaggaactta tgtaatgnta aaattacatt ataatttttc attccgaatt gacaaatgat   300
ttcaaaaaca aggnatcaaa gtttgactgc aaatagtaat gcaatataat ttcataaaaa   360
tccttcaatt tctatttttt tccttttctg tagttgacat atgaagacca cttcaatttc   420
taaaaaaggg aaccattcca attttccctc cccaagaaaa tgtctcacaa ttacaaagta   480
gaaaaacagc cgttcataaa atgcaaaaaa aanttctgat tttatacatg aaataatttc   540
tagatca   547

<210> 1038
<211> 451
<212> DNA
<213> Homo sapien

<400> 1038
ccactctgcc caggagctgc cgaccatcag gacgcctgca gacatttaca gagcctttgt   60
tgatgttgtg aatggagaat atgtccctcg caaatccatc ctgaagtctc gaagtagaga   120
gaatagtgtg tgtagcgaca ctagtgaaag cagtgctgct gaatttgatg ataggcgggg   180
agttttgagg agtatcagct gcgaagaagc cacttgcagt gacaccagtg agagcatttt   240
ggaagaggaa ccacaagaaa atcaaaagaa acttttgccc ttatcagtaa cacctgaggc   300
tttttctgga actgttatag aaaaagaatt tgtatcacct tccttaacac caccccccagc   360
cattgctcat cccgcactac ccactattcc agaacgaaag gaagttctgt tggaagcatc   420
tgaagaaact ggaaagaggg tttcaaagtt t   451

<210> 1039
<211> 533
<212> DNA
<213> Homo sapien

<400> 1039
ccaagcccgt gcaccgtttt ttgtaaggta tctctttaag cgcctgggac cccaagcgag   60
agtccgaaat tagcagagcg ctaaaaggag gggcccgaag gcagtggggc tttgagctag   120
aagcctcttt ttacctgctt gacaggtaat ttctgtaatt ggttgtgatt gaatttgata   180
gggtagagaa ttaaatgagg gaagctgtgt atacttccta gtaagagcta ttatatgact   240
gattacatta acatcatatg gaaaaaaatt gtcaaaagta ctccgggaaa gcccttaaat   300
agttggtaaa gtacagaaca catgattgtc aatatatgta aatacaggat gagctaggac   360
agagggcccc ttctttcaca ccacttaaat tagttcccac tttaaccttg tttgagattg   420
acttctggag agttaaatgc agatagactt aactctccta agtcaggtga gactgagagc   480
tgactgctac aataattacg gagcccaaat gcagtaaaac agcctgtttt tca   533

<210> 1040
<211> 317
<212> DNA
<213> Homo sapien

<220>

```
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G


<400> 1040
tgcctgctgg  ggattactcg  atcaaaacct  tccttccctg  gctacttccc  ttcctcccgg          60
ggccttcctt  ttgaggagct  ggaggggtgg  ggagctagag  gccacctatg  ccagtgctca         120
aggttactgg  gagtgtgggc  tgcccttgnt  gcctgcaccc  ttccctcttc  cctctccctc         180
tctctgggac  cactgggtac  aagagatggg  atgctccgac  agcgtctnca  attatgaaac         240
taatcttaac  ccctgtgctg  tcagataccc  tgtttctgga  gtcacatcag  tgaggaggga         300
tgtgggtaag  aggagca                                                            317


<210> 1041
<211> 407
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G


<400> 1041
ccaagacagt  ccacttacat  ggatcgtgtc  ttcaagcaat  ttgtncaagc  catggttgag          60
catggacatg  aactctctta  acatgtantt  ctttgggtgc  attttgtctg  aaccacaatt         120
gtgaaggcag  ctcagcttag  tgcacaaatt  ttaactgttg  tatataaagc  aaataagtca         180
gcanatgggt  gaagaggtcc  agaatgatat  gcaaaaacta  cttttttagag  aaacananca        240
actttgtagc  aacaaattaa  atatagtatt  agattgttac  ttacgtagat  tttattttta         300
ctatgcctta  ccaagtacat  ccttaaacaa  agtagtatgt  acatgaaatt  gcacttaacc         360
aaaactattg  tgtaaaacaa  atttttaatt  cctcagggtt  ttaattt                        407


<210> 1042
<211> 519
<212> DNA
<213> Homo sapien


<220>
<221> misc_feature
<222> (1)...(519)
<223> n = A,T,C or G


<400> 1042
ccaccacacc  caattccttg  ctggtatcat  ggcagccgcc  acgtgccagg  attaccggct          60
acatcatcaa  gtatgagaag  cctgggtctc  ctcccagaga  agtggtccct  cggccccgcc         120
ctggtgtcac  agaggctact  attactggcc  tggaaccggg  aaccgaatat  acaatttatg         180
tcattgccct  gaagaataat  cagaagagcg  agccctgat   tggaaggaaa  aagacagacg         240
agcttcccca  actggtaacc  cttccacacc  ccaatcttca  tggaccagag  atcttggatg         300
ttccttccac  agttcaaaag  accccttttcg  tcacccaccc  tgggtatgac  actggaaatg        360
gtattcagct  tcctggcact  tctggtcagc  aacccagtgt  tgggcaacaa  atgatctttg         420
aggaacatgg  ttttaggcgg  accacaccgg  cccacaacgg  ncacccccat  aaaggcatag         480
gccaaagacc  atacccgccg  aatgtaggac  aagaaagct                                  519


<210> 1043
<211> 294
<212> DNA
<213> Homo sapien


<400> 1043
```

```
ccatgacagc agctactgct tcacatagca gcatacgcca catgttcacc ttcaatattt        60
ttccagtctg tctatctttc tccacacagt agcagctatc atagaactct gtgaaagcag       120
ttgccagctc atatatataa tcacagagag tgtggagaaa taagtcatct aaaatctttt       180
gcagaatctc agggaaccgt aaaatgcacc ggcctagttt ccattccttc tcatgatcca       240
aaagaatctt ggtttctcga gcagcttttt ggagcatttc ttcatcaata ttgg            294
```

```
<210> 1044
<211> 384
<212> DNA
<213> Homo sapien
```

```
<400> 1044
ccaggcgctc cttgtcggca tcagggaggg tggccttgaa ctgctcatgg gctgtggtca        60
gtccctggat ctcctcaatg gtgtgcacaa tgaaggtgtc ctgcaggtcc tccatggccc       120
cctccatcca gttgttgaag ggtgcagccc gcttggcata ctccaagtac agctggtcaa       180
tggtctccag cagtttctcg gtccgctcca gagcttccct tcgcttctga gttagggccc       240
ccagattgtc ccactggtca cagatctttt ggcaacgggc gttgacactg ggtgagtcat       300
aatagtccag ctcattgagc tcctgtgcga tggcggcaat ctgctccaca cggtcctggt       360
gggcagccag gtcactctcg aagg                                             384
```

```
<210> 1045
<211> 456
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(456)
<223> n = A,T,C or G
```

```
<400> 1045
aaaactaatg ttacaaatct gtattatcac ttgtatataa atagtatata gctgatcatt        60
aataaggtgt ataagtacaa tgtattctaa aactgttaag caaaaaaaaa aaacaaanna       120
aaaatccaag tgtcctcctc caccactcac gctggtgatc actgtgctct ctgccagctg       180
cgtggagtga cgggaggagg gaatcactgt gtgtgcgaga gtgcttcaga ctcaatttcc       240
aaaataattt tcacccctct aagcatgtaa atatacaaag atggatcctt catagaaatt       300
aaaaaatcaa tttgagctca tttcgaatac agaacaagta tggcacagat ggaagtcctg       360
ccacgtttcc tttaatgatg ctgactcttg tatcacacag gccagcatga agtttcttac       420
tcagacttta caggcatttt ccgtaattca atcagt                                456
```

```
<210> 1046
<211> 136
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(136)
<223> n = A,T,C or G
```

```
<400> 1046
atnatctgtt tctaaacgaa agctgcngcg gaatgagagt gagccttcag agatgaaagc        60
catggctctg aaaggtggcn gggcagaagg aaccctncgt tcanctaaaa gtgaggagtc       120
tcttacatct ctccat                                                      136
```

```
<210> 1047
<211> 453
<212> DNA
```

<213> Homo sapien

<400> 1047
```
aaaaaaatcc aaatgctggc attgtccaga aaaatttaac aggtttattt ataattatta     60
taaagttgaa ccgctgaaac ttgttcactg aaacatttta acttgcatta atgctttacg    120
tctccgcatt tatattaaaa attcacacac aaatgaaaat ggaaaaactg ccaatacctg    180
atttctgtcc cctattttc cactcgcaat catatactta ggtacctttt gaccccatgg      240
aaaaaaaata tctaacgttc agaactacca ataacaggaa gaagagaaat ttttttttt       300
tttttgggaa tgaaatgttt cccatcatag tggattctta agcacgttct ccacgtatgc    360
ggcgtgctag ctggatgtct tttggcataa ttgttacacg tttggcatgg atagcacaca    420
ggttggtgtc ttcaaaaagg ccaaccagat agg                                  453
```

<210> 1048
<211> 219
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(219)
<223> n = A,T,C or G

<400> 1048
```
aaaatcacaa acnttaacgg cagtaggcac caccatgtaa aagtgagctc agacgtctct     60
aaaaaatgtt tcctttataa aagcacatgg cggttgaatc ttaaggttaa attttaatat    120
gaaagatcct catgaattaa atagttgatg caatttttaa cgttaattga tataaaaaaa    180
aacaacaaaa ttaggcttgt aaaactgact ttttcatta                            219
```

<210> 1049
<211> 2465
<212> DNA
<213> Homo sapiens

<400> 1049
```
agcaaataat caatttagca ttacaaaaaa cagggatggt agggaaaata gaaggagaaa  60
actctaaaat aggtgatgat aatgaaaatt taacctttaa attagaagta aatgagctga 120
gtggtaaatt agacaacact aacgaataca atagtaatga tggtaagaaa ttaccccagg 180
gtgaatcacg aagttacgaa gtcatgggaa gtatggaaga aaccttatgc aatatagatg 240
acagagatgg aaatcgcaat gtccatttag aatttacaga aagagagagt aggaaggatg 300
gagaggatga atttgtcaaa gaaatgagag aggaaagaaa atttcagaaa ttgaagaata 360
aagaggaggt tttaaaagcc tccagagaag aaaaagtgtt gatggatgaa ggagcagtac 420
ttaccctggc agccgacctt tcatcagcaa cactggatat tagtaagcaa tggagtaatg 480
tcttcaacat tctgagagaa aatgattttg aacctaaatt tctgtgtgaa gttaaattag 540
catttaaatg tgatggtgaa ataaagacat tttcagatct gcaaagcctt agaaaatttg 600
ccagccaaaa atcttctatg aaagaattac tgaaagatgt actcccacaa aaggaagaaa 660
taaatcaagg aggaagaaaa tatggaattc aagaaaaaag ggataaaacc ctaatagact 720
caaagcatag agctggagaa ataaccagtg atggcttgag cttcctattt cttaaagaag 780
taaaagttgc taagccagag gagatgaaaa acttagagac tcaagaggaa gagttttccg 840
agctagagga gctggatgaa gaggcctcag ggatggagga tgatgaagat acctcagggc 900
tggaggagga ggaggaagag ccctcagggc tggaggagga agaagaagaa gaggcttcag 960
ggttggagga ggatgaggcc tcagggctag aggaggaaga ggaacagact tcagaacagg 1020
actcaacctt tcaggtcat actttggtag atgcaaagca tgaagttgag ataaccagtg 1080
atggcatgga aactactttc attgactctg tagaggattc tgaatcagag gaggaagaag 1140
aaggaaagag ctctgaaaca ggaaaggtaa agactacctc cctgactgag aaaaaagcct 1200
cacgtagaca aaaagaaatt cccttttagtt atttggttgg ggactctggg aagaaaaagt 1260
tggtgaaaca ccaggtggtg cacaaaaccc aggaggaaga ggaaacagct gtgcccacaa 1320
gtcaaggaac tggcacaccc tgtctgacct tatgttaggc ctctccctca aagtcactag 1380
agatgagtca tgatgagcat aaaaagcatt cacatacaaa tttgagtatt tcaacaggag 1440
```

```
tcaccaaact taagaaaaca gaagaaaaga aacacagaac tctgcacaca gaagaactaa 1500
catccaaaga agcagactta acagaggaaa cagaagaaaa cttgagaagt agtgtgatta 1560
atagcatcag agagataaaa gaggagattg gaaatttgaa aagttcccat tcaggtgtct 1620
tggaaattga aaattcagta gatgatctga gtagcagaat ggacatactt gaagaaagaa 1680
tagacagtct agaagatcaa attgaagaat tctctaagga tacaatgcaa atgaccaaac 1740
agataattag taaagaaagg caaagagata tagaggagag atctagaagt tgcaacattc 1800
gtttgatagg aattccagaa aaggagagtt atgagaatag ggcagaggac ataattaaag 1860
aaataattga tgaaaacttt gcagaactaa agaaaggttc aagtcttgag attgtcagtg 1920
cttgtcgagt acctagtaaa attgatgaaa agagactgac tcctagacac atcttggtga 1980
aattttggaa ttctagtgat aaagagaaaa taataagggc ttctagagag agaagagaaa 2040
ttacctacca aggaacaaga atcaggttga cagcagactt atcactggac acactggatg 2100
ctagaagtaa atggagcaat gtcttcaaag ttctgctgga aaaaggcttt aatcctagaa 2160
tcctatatcc agccaaaatg gcatttgatt ttaggggtaa aacaaaggta tttcttagta 2220
ttgaagaatt tagagattat gttttgcata tgcccacctt gagagaatta ctggggaata 2280
atatacctta gcacgccagg gtgactacaa acaatatgct ttcctccccc agcatgcatc 2340
caaaaatcaa caagtaaaac gaaaatacac ttctacccag aaggatggac agctaatagc 2400
gtacttgggg atgaggagca aggaatatta cagatattac ctagatgtta ataaagggta 2460
tgttt                                                              2465
```

```
<210> 1050
<211> 3120
<212> DNA
<213> Homo sapiens
```

```
<400> 1050
aaaggaaaca caagttgctt ttgataacac atgatgcaaa gaaagaatta gaaagaatga 60
gcaatgaagc cggtataaat gacaaacaag tgtccaaagg cccaagaagt tactaccaaa 120
agctttcaaa caatattggt ttatctttaa agacacatcc atagcatact ttaaaaataa 180
ggaacttgaa caaggagaac cacaagaaaa actaaatctt agaggctgcg aagttgtgcc 240
cgatgtaaat gtagcaggaa gaaaatttgg aatcaagtta ctaatccctg ttgccgatgg 300
tatgaatgaa atgtatttga gatgtgacca tgagaatcaa tacgcccaat ggatggctgc 360
ctgcatgttg gcatcgaagg gcaaaaccat ggcagacagc tcctaccagc cagaggtcct 420
caacatcctt tcatttctga ggatgaaaaa caggaactct gcatctcagg tggcttccag 480
tctcgaaaac atggatatga acccagaatg ttttgtgtca ccacggtgtg caaaaagaca 540
caaatccaaa cagctggccg cccggatcct ggaggcgcac cagaacgtgg cccagatgcc 600
cctggtcgaa gccaagctgc ggttcatcca ggcgtggcag tcactgcctg agtttggcct 660
cacctactac cttgtcagat ttaaaggaag caaaaaagat gacattctgg gagtttcata 720
taacaggttg attaaaattg atgcagccac cgggattcca gtgacaacat ggagattcac 780
aaatatcaaa cagtggaatg taaactggga aacccggcag gtggtcatcg agtttgacca 840
aaacgtcttt actgctttca cctgcctgag tgcagattgc aagattgtgc acgagtacat 900
tggcggctac attttcttgt ccacccgctc caaggaccag aatgaaacac tcgatgagga 960
cttgttccac aaattgaccg gcggtcagga ttgaaacaag cacgcgtgct cggctcacac 1020
caacaaggca agccaaaggc gcccctcccc agagggatcc ctaacgtgcc cagcatgtag 1080
attctggact aacagacaac atacattcac cgctggtcac ccagatcctc attcaaaccc 1140
actgctggca catccctttc cttactttgc cctgtgctac cagccacgga aggagcctct 1200
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ttatcctcgt gctgatctgt ctcattacta agtcaatgga gaagacagaa aggtaaaaat 1380
cacgtgtagc aagaacaact cttatttcac aaactcaggt atgaaacgaa acgcctgtcc 1440
ttcatggaac tgcttttagc tcctgtcttt tcaaaatggc agagggagtt cctacacaca 1500
ctttttccct ggaggccaag gtctaggggt agaaagggga ggggtggggc taccaggtag 1560
cagttgacaa cccaaggtca gaggagtggc cctcagtgtc atctgtccac agtgatacct 1620
gccaagatga ccactgaccc acatctggtc ttagtcattg gtctcctcag atttctgggg 1680
ccacctgcaa gccccattcc attcctacag atctctcagc cacctgtaag tcctttgtga 1740
agatgtgggt gacacagggg gacaggaaaa cccatttctc aacccagatc catgtctcca 1800
ctgcttctac tctgggttgg gattcaggaa gacaggcaca gtcctctctg ttcatagaaa 1860
cacctgccag tgtcaaggat ccagtcagg tgtctatccc aactggtcag ggagagaagg 1920
gcagacccat tctcaaagac caccatgttc aaggtctgac agctccccac tggctgcccc 1980
```

293

```
cacaggggct ttaggctggt ctgggtcatg gggaagcgtc cctcttatcg ctggtctgtg 2040
ttctcctgga tttggtatct atgttggtac gactcctggc cttttatcta aaggactttg 2100
gcttttgtaa atcacaagcc aataatagac ttttttctcc ccctctgttt tttgctgtgt 2160
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gaaggtcaaa agcaatacca gaagtaaagg gaaatatcag acaatatttt attatttttt 2340
catagatgtt ctgccacaca aagaacttgg ggtgtaagga taaggcaaaa gctccaatcc 2400
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aatctggttc acatcataaa gaacttgatt tgaaatgttt tctatagaaa caagtgctaa 2760
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ttagaaccta gtcagttctt taagattata actggtccta cattaaaata atgcttctcg 2880
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cttcagttca acatgcttcc ttagcttttc atagttgtct gacatttcca tgaaaacaaa 3000
ggaaccaact ttgtttttaac caaactttgt ttggttacag ttttcagggg agcgtttctt 3060
ccatgacaca cagcaacatc ccaaagaaat aaacaagtgt gacaaaaaaa aaaaaaaaaa 3120
```

<210> 1051
<211> 1745
<212> DNA
<213> Homo sapiens

<400> 1051
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gcgcccctgg cagccttcaa cgtcggtccc caggcagcat ggtgaggtct gctcccggac 60
cctcgccacc atgtacgtga gctacctcct ggacaaggac gtgagcatgt accctagctc 120
cgtgcgccac tctggcggcc tcaacctggc gccgcagaac ttcgtcagcc ccccgcagta 180
cccggactac ggcggttacc acgtggcggc cgcagctgca gcgcagaact tggacagcgc 240
gcagtccccg gggccatcct ggccggcagc gtatggcgcc ccactccggg aggactggaa 300
tggctacgcg cccggaggcg cggccgccgc caacgccgtg gctcacgcgc tcaacggtgg 360
ctccccggcc gcagccatgg gctacagcag ccccgcagac taccatccgc accaccaccc 420
gcataccac ccgcaccacc cggccgccgc gccttcctgc gcttctgggc tgctgcaaac 480
gctcaacccc ggccctcctg ggcccgccgc caccgctgcc gccgagcagc tgtctcccgg 540
cggccagcgg cggaacctgt gcgagtggat gcggaagccg cgcagcagt ccctcggcag 600
ccaagtgaaa accaggacga aagacaaata tcgagtggtg tacacggacc accagcggct 660
ggagctggag aaggagtttc actacagtcg ctacatcacc atccggagga aagccgagct 720
agccgccacg ctgggctct ctgagaggca ggttaaaatc tggtttcaga accgcagagc 780
aaaggagagg aaaatcaaca agaagaagtt gcagcagcaa cagcagcagc agccaccaca 840
gccgcctccg ccgccaccac agcctcccca gcctcagcca ggtcctctga gaagtgtccc 900
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gagagacccc tcccctccca cccacagcca tagacctaca gacctggctc tcagaggaaa 1140
aatgggagcc aggagtaaga caagtgggat ttggggcctc aagaaatata ctctcccaga 1200
tttttacttt ttccatctgg ctttttctgc cactgaggag acagaaagcc tccgctgggc 1260
ttcattccgg actggcagaa gcattgcctg gactgaccac accaaccagc ttcatctatc 1320
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<210> 1052

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<213> Homo sapiens

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<211> 480
<212> DNA
<213> Homo sapiens

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<212> DNA
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<213> Homo sapiens

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<211> 3311
<212> DNA
<213> Homo sapiens
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<211> 2095
<212> DNA
<213> Homo sapiens
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<211> 15720
<212> DNA
<213> Homo sapiens
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298

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Cys Asn Ile Asp Asp Arg Asp Gly Asn Arg Asn Val His Leu Glu Phe
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Thr Glu Arg Glu Ser Arg Lys Asp Gly Glu Asp Glu Phe Val Lys Glu
              85                  90                  95

Met Arg Glu Glu Arg Lys Phe Gln Lys Leu Lys Asn Lys Glu Glu Val
          100                 105                 110
```

```
Leu Lys Ala Ser Arg Glu Glu Lys Val Leu Met Asp Glu Gly Ala Val
        115             120             125

Leu Thr Leu Ala Ala Asp Leu Ser Ser Ala Thr Leu Asp Ile Ser Lys
        130             135             140

Gln Trp Ser Asn Val Phe Asn Ile Leu Arg Glu Asn Asp Phe Glu Pro
145             150             155             160

Lys Phe Leu Cys Glu Val Lys Leu Ala Phe Lys Cys Asp Gly Glu Ile
            165             170             175

Lys Thr Phe Ser Asp Leu Gln Ser Leu Arg Lys Phe Ala Ser Gln Lys
            180             185             190

Ser Ser Met Lys Glu Leu Leu Lys Asp Val Leu Pro Gln Lys Glu Glu
        195             200             205

Ile Asn Gln Gly Gly Arg Lys Tyr Gly Ile Gln Glu Lys Arg Asp Lys
    210             215             220

Thr Leu Ile Asp Ser Lys His Arg Ala Gly Glu Ile Thr Ser Asp Gly
225             230             235             240

Leu Ser Phe Leu Phe Leu Lys Glu Val Lys Val Ala Lys Pro Glu Glu
            245             250             255

Met Lys Asn Leu Glu Thr Gln Glu Glu Glu Phe Ser Glu Leu Glu Glu
        260             265             270

Leu Asp Glu Glu Ala Ser Gly Met Glu Asp Asp Glu Asp Thr Ser Gly
        275             280             285

Leu Glu Glu Glu Glu Glu Glu Pro Ser Gly Leu Glu Glu Glu Glu Glu
    290             295             300

Glu Glu Ala Ser Gly Leu Glu Glu Asp Glu Ala Ser Gly Leu Glu Glu
305             310             315             320

Glu Glu Glu Gln Thr Ser Glu Gln Asp Ser Thr Phe Gln Gly His Thr
            325             330             335

Leu Val Asp Ala Lys His Glu Val Glu Ile Thr Ser Asp Gly Met Glu
            340             345             350

Thr Thr Phe Ile Asp Ser Val Glu Asp Ser Glu Ser Glu Glu Glu Glu
            355             360             365

Glu Gly Lys Ser Ser Glu Thr Gly Lys Val Lys Thr Thr Ser Leu Thr
    370             375             380

Glu Lys Lys Ala Ser Arg Arg Gln Lys Glu Ile Pro Phe Ser Tyr Leu
385             390             395             400

Val Gly Asp Ser Gly Lys Lys Lys Leu Val Lys His Gln Val Val His
            405             410             415
```

```
Lys Thr Gln Glu Glu Glu Glu Thr Ala Val Pro Thr Ser Gln Gly Thr
        420             425             430

Gly Thr Pro Cys Leu Thr Leu Cys
        435             440
```

<210> 1060
<211> 230
<212> PRT
<213> Homo sapiens

<400> 1060

```
Met Asn Glu Met Tyr Leu Arg Cys Asp His Glu Asn Gln Tyr Ala Gln
                5                   10                  15

Trp Met Ala Ala Cys Met Leu Ala Ser Lys Gly Lys Thr Met Ala Asp
                20                  25                  30

Ser Ser Tyr Gln Pro Glu Val Leu Asn Ile Leu Ser Phe Leu Arg Met
        35                  40                  45

Lys Asn Arg Asn Ser Ala Ser Gln Val Ala Ser Ser Leu Glu Asn Met
    50                  55                  60

Asp Met Asn Pro Glu Cys Phe Val Ser Pro Arg Cys Ala Lys Arg His
65                  70                  75                  80

Lys Ser Lys Gln Leu Ala Ala Arg Ile Leu Glu Ala His Gln Asn Val
                85                  90                  95

Ala Gln Met Pro Leu Val Glu Ala Lys Leu Arg Phe Ile Gln Ala Trp
            100             105             110

Gln Ser Leu Pro Glu Phe Gly Leu Thr Tyr Tyr Leu Val Arg Phe Lys
        115             120             125

Gly Ser Lys Lys Asp Asp Ile Leu Gly Val Ser Tyr Asn Arg Leu Ile
    130             135             140

Lys Ile Asp Ala Ala Thr Gly Ile Pro Val Thr Thr Trp Arg Phe Thr
145             150             155             160

Asn Ile Lys Gln Trp Asn Val Asn Trp Glu Thr Arg Gln Val Val Ile
                165             170             175

Glu Phe Asp Gln Asn Val Phe Thr Ala Phe Thr Cys Leu Ser Ala Asp
            180             185             190

Cys Lys Ile Val His Glu Tyr Ile Gly Gly Tyr Ile Phe Leu Ser Thr
            195             200             205

Arg Ser Lys Asp Gln Asn Glu Thr Leu Asp Glu Asp Leu Phe His Lys
    210                 215             220

Leu Thr Gly Gly Gln Asp
225             230
```

<210> 1061
<211> 311
<212> PRT
<213> Homo sapiens

<400> 1061
Met Tyr Val Ser Tyr Leu Leu Asp Lys Asp Val Ser Met Tyr Pro Ser
                  5   10   15

Ser Val Arg His Ser Gly Gly Leu Asn Leu Ala Pro Gln Asn Phe Val
             20   25   30

Ser Pro Pro Gln Tyr Pro Asp Tyr Gly Gly Tyr His Val Ala Ala Ala
        35   40   45

Ala Ala Ala Gln Asn Leu Asp Ser Ala Gln Ser Pro Gly Pro Ser Trp
     50   55   60

Pro Ala Ala Tyr Gly Ala Pro Leu Arg Glu Asp Trp Asn Gly Tyr Ala
65   70   75   80

Pro Gly Gly Ala Ala Ala Ala Asn Ala Val Ala His Ala Leu Asn Gly
                 85   90   95

Gly Ser Pro Ala Ala Ala Met Gly Tyr Ser Ser Pro Ala Asp Tyr His
             100   105   110

Pro His His His Pro His His His Pro His His Pro Ala Ala Ala Pro
        115   120   125

Ser Cys Ala Ser Gly Leu Leu Gln Thr Leu Asn Pro Gly Pro Pro Gly
     130   135   140

Pro Ala Ala Thr Ala Ala Ala Glu Gln Leu Ser Pro Gly Gly Gln Arg
145   150   155   160

Arg Asn Leu Cys Glu Trp Met Arg Lys Pro Ala Gln Gln Ser Leu Gly
             165   170   175

Ser Gln Val Lys Thr Arg Thr Lys Asp Lys Tyr Arg Val Val Tyr Thr
             180   185   190

Asp His Gln Arg Leu Glu Leu Glu Lys Glu Phe His Tyr Ser Arg Tyr
        195   200   205

Ile Thr Ile Arg Arg Lys Ala Glu Leu Ala Ala Thr Leu Gly Leu Ser
     210   215   220

Glu Arg Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Ala Lys Glu Arg
225   230   235   240

Lys Ile Asn Lys Lys Lys Leu Gln Gln Gln Gln Gln Gln Pro Pro
             245   250   255

Gln Pro Pro Pro Pro Pro Gln Pro Pro Gln Pro Gln Pro Gly Pro
             260   265   270

306

```
Leu Arg Ser Val Pro Glu Pro Leu Ser Pro Val Ser Ser Leu Gln Ala
    275             280             285

Ser Val Ser Gly Ser Val Pro Gly Val Leu Gly Pro Thr Gly Gly Val
    290             295             300

Leu Asn Pro Thr Val Thr Gln
305             310


<210> 1062
<211> 237
<212> PRT
<213> Homo sapiens

<400> 1062
Met Ala Gly Val Ser Ala Cys Ile Lys Tyr Ser Met Phe Thr Phe Asn
                5               10              15

Phe Leu Phe Trp Leu Cys Gly Ile Leu Ile Leu Ala Leu Ala Ile Trp
            20              25              30

Val Arg Val Ser Asn Asp Ser Gln Ala Ile Phe Gly Ser Glu Asp Val
        35              40              45

Gly Ser Ser Ser Tyr Val Ala Val Asp Ile Leu Ile Ala Val Gly Ala
    50              55              60

Ile Ile Met Ile Leu Gly Phe Leu Gly Cys Cys Gly Ala Ile Lys Glu
65              70              75              80

Ser Arg Cys Met Leu Leu Leu Phe Phe Ile Gly Leu Leu Leu Ile Leu
            85              90              95

Leu Leu Gln Val Ala Thr Gly Ile Leu Gly Ala Val Phe Lys Ser Lys
            100             105             110

Ser Asp Arg Ile Val Asn Glu Thr Leu Tyr Glu Asn Thr Lys Leu Leu
            115             120             125

Ser Ala Thr Gly Glu Ser Glu Lys Gln Phe Gln Glu Ala Ile Ile Val
    130             135             140

Phe Gln Glu Glu Phe Lys Cys Cys Gly Leu Val Asn Gly Ala Ala Asp
145             150             155             160

Trp Gly Asn Asn Phe Gln His Tyr Pro Glu Leu Cys Ala Cys Leu Asp
                165             170             175

Lys Gln Arg Pro Cys Gln Ser Tyr Asn Gly Lys Gln Val Tyr Lys Glu
            180             185             190

Thr Cys Ile Ser Phe Ile Lys Asp Phe Leu Ala Lys Asn Leu Ile Ile
            195             200             205

Val Ile Gly Ile Ser Phe Gly Leu Ala Val Ile Glu Ile Leu Gly Leu
    210             215             220
```

Val Phe Ser Met Val Leu Tyr Cys Gln Ile Gly Asn Lys
225   230   235

<210> 1063
<211> 80
<212> PRT
<213> Homo sapiens

<400> 1063
Met Ala Ala Arg Ala Leu Cys Met Leu Gly Leu Val Leu Ala Leu Leu
                5   10   15

Ser Ser Ser Ser Ala Glu Glu Tyr Val Gly Leu Ser Ala Asn Gln Cys
                20   25   30

Ala Val Pro Ala Lys Asp Arg Val Asp Cys Gly Tyr Pro His Val Thr
            35   40   45

Pro Lys Glu Cys Asn Asn Arg Gly Cys Cys Phe Asp Ser Arg Ile Pro
        50   55   60

Gly Val Pro Trp Cys Phe Lys Pro Leu Gln Glu Ala Glu Cys Thr Phe
65   70   75   80

<210> 1064
<211> 323
<212> PRT
<213> Homo sapiens

<400> 1064
Met Ala Tyr Val Pro Ala Pro Gly Tyr Gln Pro Thr Tyr Asn Pro Thr
                5   10   15

Leu Pro Tyr Tyr Gln Pro Ile Pro Gly Gly Leu Asn Val Gly Met Ser
                20   25   30

Val Tyr Ile Gln Gly Val Ala Ser Glu His Met Lys Arg Phe Phe Val
            35   40   45

Asn Phe Val Val Gly Gln Asp Pro Gly Ser Asp Val Ala Phe His Phe
        50   55   60

Asn Pro Arg Phe Asp Gly Trp Asp Lys Val Val Phe Asn Thr Leu Gln
65   70   75   80

Gly Gly Lys Trp Gly Ser Glu Glu Arg Lys Arg Ser Met Pro Phe Lys
                85   90   95

Lys Gly Ala Ala Phe Glu Leu Val Phe Ile Val Leu Ala Glu His Tyr
            100   105   110

Lys Val Val Val Asn Gly Asn Pro Phe Tyr Glu Tyr Gly His Arg Leu
            115   120   125

Pro Leu Gln Met Val Thr His Leu Gln Val Asp Gly Asp Leu Gln Leu
        130   135   140

```
Gln Ser Ile Asn Phe Ile Gly Gly Gln Pro Leu Arg Pro Gln Gly Pro
145             150             155             160

Pro Met Met Pro Pro Tyr Pro Gly Pro Gly His Cys His Gln Gln Leu
            165             170             175

Asn Ser Leu Pro Thr Met Glu Gly Pro Pro Thr Phe Asn Pro Pro Val
            180             185             190

Pro Tyr Phe Gly Arg Leu Gln Gly Gly Leu Thr Ala Arg Arg Thr Ile
        195             200             205

Ile Ile Lys Gly Tyr Val Pro Pro Thr Gly Lys Ser Phe Ala Ile Asn
    210             215             220

Phe Lys Val Gly Ser Ser Gly Asp Ile Ala Leu His Ile Asn Pro Arg
225             230             235             240

Met Gly Asn Gly Thr Val Val Arg Asn Ser Leu Leu Asn Gly Ser Trp
            245             250             255

Gly Ser Glu Glu Lys Lys Ile Thr His Asn Pro Phe Gly Pro Gly Gln
            260             265             270

Phe Phe Asp Leu Ser Ile Arg Cys Gly Leu Asp Arg Phe Lys Val Tyr
        275             280             285

Ala Asn Gly Gln His Leu Phe Asp Phe Ala His Arg Leu Ser Ala Phe
    290             295             300

Gln Arg Val Asp Thr Leu Glu Ile Gln Gly Asp Val Thr Leu Ser Tyr
305             310             315             320

Val Gln Ile
```

```
<210> 1065
<211> 957
<212> PRT
<213> Homo sapiens

<400> 1065
Arg Asn Arg Pro His Thr Thr Ala Phe Pro Gly Ser Thr Thr Met Pro
                5               10              15

Gly Val Ser Gln Glu Ser Thr Ala Ser His Ser Ser Pro Gly Ser Thr
            20              25              30

Asp Thr Thr Leu Ser Pro Gly Ser Thr Ala Ser Ser Leu Gly Pro
        35              40              45

Glu Ser Thr Thr Phe His Ser Gly Pro Gly Ser Thr Glu Thr Thr Leu
    50              55              60

Leu Pro Asp Asn Thr Thr Ala Ser Gly Leu Leu Glu Ala Ser Thr Pro
65              70              75              80
```

```
Val His Ser Ser Thr Gly Ser Pro His Thr Thr Leu Ser Pro Ala Gly
                    85              90                  95

Ser Thr Thr Arg Gln Gly Glu Ser Thr Thr Phe Gln Ser Trp Pro Asn
                100             105             110

Ser Lys Asp Thr Thr Pro Ala Pro Pro Thr Thr Thr Ser Ala Phe Val
        115             120             125

Glu Leu Ser Thr Thr Ser His Gly Ser Pro Ser Ser Thr Pro Thr Thr
    130             135             140

His Phe Ser Ala Ser Ser Thr Thr Leu Gly Arg Ser Glu Glu Ser Thr
145             150             155             160

Thr Val His Ser Ser Pro Val Ala Thr Ala Thr Thr Pro Ser Pro Ala
            165             170             175

Arg Ser Thr Thr Ser Gly Leu Val Glu Glu Ser Thr Thr Tyr His Ser
            180             185             190

Ser Pro Gly Ser Thr Gln Thr Met His Phe Pro Glu Ser Asp Thr Thr
        195             200             205

Ser Gly Arg Gly Glu Glu Ser Thr Thr Ser His Ser Ser Thr Thr His
    210             215             220

Thr Ile Ser Ser Ala Pro Ser Thr Thr Ser Ala Leu Val Glu Glu Pro
225             230             235             240

Thr Ser Tyr His Ser Ser Pro Gly Ser Thr Ala Thr Thr His Phe Pro
            245             250             255

Asp Ser Ser Thr Thr Ser Gly Arg Ser Glu Glu Ser Thr Ala Ser His
        260             265             270

Ser Asn Gln Asp Ala Thr Gly Thr Ile Val Leu Pro Ala Arg Ser Thr
    275             280             285

Thr Ser Val Leu Leu Gly Glu Ser Thr Thr Ser Pro Ile Ser Ser Gly
    290             295             300

Ser Met Glu Thr Thr Ala Leu Pro Gly Ser Thr Thr Thr Pro Gly Leu
305             310             315             320

Ser Glu Lys Ser Thr Thr Phe His Ser Ser Pro Arg Ser Pro Ala Thr
        325             330             335

Thr Leu Ser Pro Ala Ser Thr Thr Ser Ser Gly Val Ser Glu Glu Ser
            340             345             350

Thr Thr Ser His Ser Arg Pro Gly Ser Thr His Thr Thr Ala Phe Pro
        355             360             365

Asp Ser Thr Thr Thr Pro Gly Leu Ser Arg His Ser Thr Thr Ser His
370             375             380
```

```
Ser Ser Pro Gly Ser Thr Asp Thr Thr Leu Leu Pro Ala Ser Thr Thr
385             390             395             400

Thr Ser Gly Pro Ser Gln Glu Ser Thr Thr Ser His Ser Ser Pro Gly
            405             410             415

Ser Thr Asp Thr Ala Leu Ser Pro Gly Ser Thr Thr Ala Leu Ser Phe
            420             425             430

Gly Gln Glu Ser Thr Thr Phe His Ser Ser Pro Gly Ser Thr His Thr
        435             440             445

Thr Leu Phe Pro Asp Ser Thr Thr Ser Ser Gly Ile Val Glu Ala Ser
    450             455             460

Thr Arg Val His Ser Ser Thr Gly Ser Pro Arg Thr Thr Leu Ser Pro
465             470             475             480

Ala Ser Ser Thr Ser Pro Gly Leu Gln Gly Glu Ser Thr Ala Phe Gln
            485             490             495

Thr His Pro Ala Ser Thr His Thr Thr Pro Ser Thr Pro Ser Thr Ala
        500             505             510

Thr Ala Pro Val Glu Glu Ser Thr Thr Tyr His Arg Ser Pro Ser Ser
        515             520             525

Thr Pro Thr Thr His Phe Pro Ala Ser Ser Thr Thr Ser Gly His Ser
    530             535             540

Glu Lys Ser Thr Ile Phe His Ser Ser Pro Asp Ala Ser Gly Thr Thr
545             550             555             560

Pro Ser Ser Ala His Ser Thr Thr Ser Gly Arg Gly Glu Ser Thr Thr
            565             570             575

Ser Arg Ile Ser Pro Gly Ser Thr Glu Ile Thr Thr Leu Pro Gly Ser
            580             585             590

Thr Thr Thr Pro Gly Leu Ser Glu Ala Ser Thr Thr Phe Tyr Ser Ser
    595             600             605

Pro Arg Ser Pro Thr Thr Thr Leu Ser Pro Ala Ser Met Thr Ser Leu
    610             615             620

Gly Val Gly Glu Glu Ser Thr Thr Ser Arg Ser Gln Pro Gly Ser Thr
625             630             635             640

His Ser Thr Val Ser Pro Ala Ser Thr Thr Pro Gly Leu Ser Glu
            645             650             655

Glu Ser Thr Thr Val Tyr Ser Ser Ser Pro Gly Ser Thr Glu Thr Thr
        660             665             670

Val Phe Pro Arg Ser Thr Thr Thr Ser Val Arg Gly Glu Glu Pro Thr
    675             680             685

Thr Phe His Ser Arg Pro Ala Ser Thr His Thr Thr Leu Phe Thr Glu
```

```
            690                  695                  700

Asp Ser Thr Thr Ser Gly Leu Thr Glu Glu Ser Thr Ala Phe Pro Gly
705             710                 715                 720

Ser Pro Ala Ser Thr Gln Thr Gly Leu Pro Ala Thr Leu Thr Thr Ala
                725                 730                 735

Asp Leu Gly Glu Glu Ser Thr Thr Phe Pro Ser Ser Ser Gly Ser Thr
            740                 745                 750

Gly Thr Thr Leu Ser Pro Ala Arg Ser Thr Thr Ser Gly Leu Val Gly
        755                 760                 765

Glu Ser Thr Pro Ser Arg Leu Ser Pro Ser Ser Thr Glu Thr Thr Thr
        770                 775                 780

Leu Pro Gly Ser Pro Thr Thr Pro Ser Leu Ser Glu Lys Ser Thr Thr
785                 790                 795                 800

Phe Tyr Thr Ser Pro Arg Ser Pro Asp Ala Thr Leu Ser Pro Ala Thr
                805                 810                 815

Thr Thr Ser Ser Gly Val Ser Glu Glu Ser Ser Thr Ser His Ser Gln
        820                 825                 830

Pro Gly Ser Thr His Thr Thr Ala Phe Pro Asp Ser Thr Thr Thr Ser
        835                 840                 845

Gly Leu Ser Gln Glu Pro Lys Thr Ser His Ser Ser Gln Gly Ser Thr
    850                 855                 860

Glu Ala Thr Leu Ser Pro Gly Ser Thr Thr Ala Ser Ser Leu Gly Gln
865                 870                 875                 880

Gln Ser Thr Thr Phe His Ser Ser Pro Gly Asp Thr Glu Thr Thr Leu
                885                 890                 895

Leu Pro Asp Asp Thr Ile Thr Ser Gly Leu Val Glu Ala Ser Thr Pro
            900                 905                 910

Thr His Ser Ser Thr Gly Ser Leu His Thr Thr Leu Thr Pro Ala Ser
        915                 920                 925

Ser Thr Ser Ala Gly Leu Gln Glu Glu Ser Thr Thr Phe Gln Ser Trp
    930                 935                 940

Pro Ser Ser Ser Asp Thr Thr Pro Ser Pro Pro Gly Pro
945                 950                 955
```

<210> 1066
<211> 914
<212> PRT
<213> Homo sapiens

<400> 1066
Met Gly Pro Phe Lys Ser Ser Val Phe Ile Leu Ile Leu His Leu Leu

312

```
                              5                    10                   15

        Glu Gly Ala Leu Ser Asn Ser Leu Ile Gln Leu Asn Asn Asn Gly Tyr
                     20                  25                  30

        Glu Gly Ile Val Val Ala Ile Asp Pro Asn Val Pro Glu Asp Glu Thr
                     35                  40                  45

        Leu Ile Gln Gln Ile Lys Asp Met Val Thr Gln Ala Ser Leu Tyr Leu
                50                  55                  60

        Phe Glu Ala Thr Gly Lys Arg Phe Tyr Phe Lys Asn Val Ala Ile Leu
        65                  70                  75                  80

        Ile Pro Glu Thr Trp Lys Thr Lys Ala Asp Tyr Val Arg Pro Lys Leu
                         85                  90                  95

        Glu Thr Tyr Lys Asn Ala Asp Val Leu Val Ala Glu Ser Thr Pro Pro
                        100                 105                 110

        Gly Asn Asp Glu Pro Tyr Thr Glu Gln Met Gly Asn Cys Gly Glu Lys
                115                 120                 125

        Gly Glu Arg Ile His Leu Thr Pro Asp Phe Ile Ala Gly Lys Lys Leu
                130                 135                 140

        Ala Glu Tyr Gly Pro Gln Gly Lys Ala Phe Val His Glu Trp Ala His
        145                 150                 155                 160

        Leu Arg Trp Gly Val Phe Asp Glu Tyr Asn Asn Asp Glu Lys Phe Tyr
                        165                 170                 175

        Leu Ser Asn Gly Arg Ile Gln Ala Val Arg Cys Ser Ala Gly Ile Thr
                180                 185                 190

        Gly Thr Asn Val Val Lys Lys Cys Gln Gly Gly Ser Cys Tyr Thr Lys
                195                 200                 205

        Arg Cys Thr Phe Asn Lys Val Thr Gly Leu Tyr Glu Lys Gly Cys Glu
        210                 215                 220

        Phe Val Leu Gln Ser Arg Gln Thr Glu Lys Ala Ser Ile Met Phe Ala
        225                 230                 235                 240

        Gln His Val Asp Ser Ile Val Glu Phe Cys Thr Glu Gln Asn His Asn
                        245                 250                 255

        Lys Glu Ala Pro Asn Lys Gln Asn Gln Lys Cys Asn Leu Arg Ser Thr
                        260                 265                 270

        Trp Glu Val Ile Arg Asp Ser Glu Asp Phe Lys Lys Thr Thr Pro Met
                        275                 280                 285

        Thr Thr Gln Pro Pro Asn Pro Thr Phe Ser Leu Leu Gln Ile Gly Gln
                290                 295                 300

        Arg Ile Val Cys Leu Val Leu Asp Lys Ser Gly Ser Met Ala Thr Gly
        305                 310                 315                 320
```

```
Asn Arg Leu Asn Arg Leu Asn Gln Ala Gly Gln Leu Phe Leu Leu Gln
                325                 330                 335

Thr Val Glu Leu Gly Ser Trp Val Gly Met Val Thr Phe Asp Ser Ala
                340                 345                 350

Ala His Val Gln Ser Glu Leu Ile Gln Ile Asn Ser Gly Ser Asp Arg
                355                 360                 365

Asp Thr Leu Ala Lys Arg Leu Pro Ala Ala Ala Ser Gly Gly Thr Ser
    370                 375                 380

Ile Cys Ser Gly Leu Arg Ser Ala Phe Thr Val Ile Arg Lys Lys Tyr
385                 390                 395                 400

Pro Thr Asp Gly Ser Glu Ile Val Leu Leu Thr Asp Gly Glu Asp Asn
                405                 410                 415

Thr Ile Ser Gly Cys Phe Asn Glu Val Lys Gln Ser Gly Ala Ile Ile
                420                 425                 430

His Thr Val Ala Leu Gly Pro Ser Ala Ala Gln Glu Leu Glu Glu Leu
                435                 440                 445

Ser Lys Met Thr Gly Gly Leu Gln Thr Tyr Ala Ser Asp Gln Val Gln
    450                 455                 460

Asn Asn Gly Leu Ile Asp Ala Phe Gly Ala Leu Ser Ser Gly Asn Gly
465                 470                 475                 480

Ala Val Ser Gln Arg Ser Ile Gln Leu Glu Ser Lys Gly Leu Thr Leu
                485                 490                 495

Gln Asn Ser Gln Trp Met Asn Gly Thr Val Ile Val Asp Ser Thr Val
                500                 505                 510

Gly Lys Asp Thr Leu Phe Leu Ile Thr Trp Thr Thr Gln Pro Pro Gln
                515                 520                 525

Ile Leu Leu Trp Asp Pro Ser Gly Gln Lys Gln Gly Gly Phe Val Val
    530                 535                 540

Asp Lys Asn Thr Lys Met Ala Tyr Leu Gln Ile Pro Gly Ile Ala Lys
545                 550                 555                 560

Val Gly Thr Trp Lys Tyr Ser Leu Gln Ala Ser Ser Gln Thr Leu Thr
                565                 570                 575

Leu Thr Val Thr Ser Arg Ala Ser Asn Ala Thr Leu Pro Pro Ile Thr
                580                 585                 590

Val Thr Ser Lys Thr Asn Lys Asp Thr Ser Lys Phe Pro Ser Pro Leu
                595                 600                 605

Val Val Tyr Ala Asn Ile Arg Gln Gly Ala Ser Pro Ile Leu Arg Ala
    610                 615                 620
```

Ser Val Thr Ala Leu Ile Glu Ser Val Asn Gly Lys Thr Val Thr Leu
625   630   635   640

Glu Leu Leu Asp Asn Gly Ala Gly Ala Asp Ala Thr Lys Asp Asp Gly
                645   650   655

Val Tyr Ser Arg Tyr Phe Thr Thr Tyr Asp Thr Asn Gly Arg Tyr Ser
                660   665   670

Val Lys Val Arg Ala Leu Gly Gly Val Asn Ala Ala Arg Arg Arg Val
        675   680   685

Ile Pro Gln Gln Ser Gly Ala Leu Tyr Ile Pro Gly Trp Ile Glu Asn
        690   695   700

Asp Glu Ile Gln Trp Asn Pro Pro Arg Pro Glu Ile Asn Lys Asp Asp
705   710   715   720

Val Gln His Lys Gln Val Cys Phe Ser Arg Thr Ser Ser Gly Gly Ser
                725   730   735

Phe Val Ala Ser Asp Val Pro Asn Ala Pro Ile Pro Asp Leu Phe Pro
                740   745   750

Pro Gly Gln Ile Thr Asp Leu Lys Ala Glu Ile His Gly Gly Ser Leu
                755   760   765

Ile Asn Leu Thr Trp Thr Ala Pro Gly Asp Asp Tyr Asp His Gly Thr
        770   775   780

Ala His Lys Tyr Ile Ile Arg Ile Ser Thr Ser Ile Leu Asp Leu Arg
785   790   795   800

Asp Lys Phe Asn Glu Ser Leu Gln Val Asn Thr Thr Ala Leu Ile Pro
                805   810   815

Lys Glu Ala Asn Ser Glu Glu Val Phe Leu Phe Lys Pro Glu Asn Ile
                820   825   830

Thr Phe Glu Asn Gly Thr Asp Leu Phe Ile Ala Ile Gln Ala Val Asp
        835   840   845

Lys Val Asp Leu Lys Ser Glu Ile Ser Asn Ile Ala Arg Val Ser Leu
        850   855   860

Phe Ile Pro Pro Gln Thr Pro Pro Glu Thr Pro Ser Pro Asp Glu Thr
865   870   875   880

Ser Ala Pro Cys Pro Asn Ile His Ile Asn Ser Thr Ile Pro Gly Ile
                885   890   895

His Ile Leu Lys Ile Met Trp Lys Trp Ile Gly Glu Leu Gln Leu Ser
                900   905   910

Ile Ala

<210> 1067
<211> 585
<212> PRT
<213> Homo sapiens

<400> 1067

```
Thr Leu Ser Pro Ala Ser Met Arg Ser Ser Ser Ile Ser Gly Glu Pro
                  5                   10                  15

Thr Ser Leu Tyr Ser Gln Ala Glu Ser Thr His Thr Thr Ala Phe Pro
                 20                  25                  30

Ala Ser Thr Thr Thr Ser Gly Leu Ser Gln Glu Ser Thr Thr Phe His
             35                  40                  45

Ser Lys Pro Gly Ser Thr Glu Thr Thr Leu Ser Pro Gly Ser Ile Thr
     50                  55                  60

Thr Ser Ser Phe Ala Gln Glu Phe Thr Thr Pro His Ser Gln Pro Gly
65                  70                  75                  80

Ser Ala Leu Ser Thr Val Ser Pro Ala Ser Thr Thr Val Pro Gly Leu
                 85                  90                  95

Ser Glu Glu Ser Thr Thr Phe Tyr Ser Ser Pro Gly Ser Thr Glu Thr
            100                 105                 110

Thr Ala Phe Ser His Ser Asn Thr Met Ser Ile His Ser Gln Gln Ser
            115                 120                 125

Thr Pro Phe Pro Asp Ser Pro Gly Phe Thr His Thr Val Leu Pro Ala
    130                 135                 140

Thr Leu Thr Thr Thr Asp Ile Gly Gln Glu Ser Thr Ala Phe His Ser
145                 150                 155                 160

Ser Ser Asp Ala Thr Gly Thr Thr Pro Leu Pro Ala Arg Ser Thr Ala
                165                 170                 175

Ser Asp Leu Val Gly Glu Pro Thr Thr Phe Tyr Ile Ser Pro Ser Pro
                180                 185                 190

Thr Tyr Thr Thr Leu Phe Pro Ala Ser Ser Ser Thr Ser Gly Leu Thr
            195                 200                 205

Glu Glu Ser Thr Thr Phe His Thr Ser Pro Ser Phe Thr Ser Thr Ile
    210                 215                 220

Val Ser Thr Glu Ser Leu Glu Thr Leu Ala Pro Gly Leu Cys Gln Glu
225                 230                 235                 240

Gly Gln Ile Trp Asn Gly Lys Gln Cys Val Cys Pro Gln Gly Tyr Val
                245                 250                 255

Gly Tyr Gln Cys Leu Ser Pro Leu Glu Ser Phe Pro Val Glu Thr Pro
            260                 265                 270

Glu Lys Leu Asn Ala Thr Leu Gly Met Thr Val Lys Val Thr Tyr Arg
```

                    275   280   285

Asn Phe Thr Glu Lys Met Asn Asp Ala Ser Ser Gln Glu Tyr Gln Asn
    290   295   300

Phe Ser Thr Leu Phe Lys Asn Arg Met Asp Val Val Leu Lys Gly Asp
305   310   315   320

Asn Leu Pro Gln Tyr Arg Gly Val Asn Ile Arg Arg Leu Leu Asn Gly
                325   330   335

Ser Ile Val Val Lys Asn Asp Val Ile Leu Glu Ala Asp Tyr Thr Leu
                340   345   350

Glu Tyr Glu Glu Leu Phe Glu Asn Leu Ala Glu Ile Val Lys Ala Lys
    .   355   360   365

Ile Met Asn Glu Thr Arg Thr Thr Leu Leu Asp Pro Asp Ser Cys Arg
    370   375   380

Lys Ala Ile Leu Cys Tyr Ser Glu Glu Asp Thr Phe Val Asp Ser Ser
385   390   395   400

Val Thr Pro Gly Phe Asp Phe Gln Glu Gln Cys Thr Gln Lys Ala Ala
                405   410   415

Glu Gly Tyr Thr Gln Phe Tyr Tyr Val Asp Val Leu Asp Gly Lys Leu
                420   425   430

Ala Cys Val Asn Lys Cys Thr Lys Gly Thr Lys Ser Gln Met Asn Cys
        435   440   445

Asn Leu Gly Thr Cys Gln Leu Gln Arg Ser Gly Pro Arg Cys Leu Cys
    450   455   460

Pro Asn Thr Asn Thr His Trp Tyr Trp Gly Glu Thr Cys Glu Phe Asn
465   470   475   480

Ile Ala Lys Ser Leu Val Tyr Gly Ile Val Gly Ala Val Met Ala Val
                485   490   495

Leu Leu Leu Ala Leu Ile Ile Leu Ile Ile Leu Phe Ser Leu Ser Gln
        500   505   510

Arg Lys Arg His Arg Glu Gln Tyr Asp Val Pro Gln Glu Trp Arg Lys
        515   520   .   525

Glu Gly Thr Pro Gly Ile Phe Gln Lys Thr Ala Ile Trp Glu Asp Gln
    530   535   540

Asn Leu Arg Glu Ser Arg Phe Gly Leu Glu Asn Ala Tyr Asn Asn Phe
545   550   555   560

Arg Pro Thr Leu Glu Thr Val Asp Ser Gly Thr Glu Leu His Ile Gln
                565   570   575

Arg Pro Glu Met Val Ala Ser Thr Val
                580   585

317

<210> 1068
<211> 5179
<212> PRT
<213> Homo sapiens

<400> 1068
Met Gly Leu Pro Leu Ala Arg Leu Ala Ala Val Cys Leu Ala Leu Ser
                5   10   15

Leu Ala Gly Gly Ser Glu Leu Gln Thr Glu Gly Arg Thr Arg Tyr His
            20   25   30

Gly Arg Asn Val Cys Ser Thr Trp Gly Asn Phe His Tyr Lys Thr Phe
        35   40   45

Asp Gly Asp Val Phe Arg Phe Pro Gly Leu Cys Asp Tyr Asn Phe Ala
    50   55   60

Ser Asp Cys Arg Gly Ser Tyr Lys Glu Phe Ala Val His Leu Lys Arg
65   70   75   80

Gly Pro Gly Gln Ala Glu Ala Pro Ala Gly Val Glu Ser Ile Leu Leu
                85   90   95

Thr Ile Lys Asp Asp Thr Ile Tyr Leu Thr Arg His Leu Ala Val Leu
            100   105   110

Asn Gly Ala Val Val Ser Thr Pro His Tyr Ser Pro Gly Leu Leu Ile
        115   120   125

Glu Lys Ser Asp Ala Tyr Thr Lys Val Tyr Ser Arg Ala Gly Leu Thr
    130   135   140

Leu Met Trp Asn Arg Glu Asp Ala Leu Met Leu Glu Leu Asp Thr Lys
145   150   155   160

Phe Arg Asn His Thr Cys Gly Leu Cys Gly Asp Tyr Asn Gly Leu Gln
            165   170   175

Ser Tyr Ser Glu Phe Leu Ser Asp Gly Val Leu Phe Ser Pro Leu Glu
        180   185   190

Phe Gly Asn Met Gln Lys Ile Asn Gln Pro Asp Val Val Cys Glu Asp
    195   200   205

Pro Glu Glu Glu Val Ala Pro Ala Ser Cys Ser Glu His Arg Ala Glu
    210   215   220

Cys Glu Arg Leu Leu Thr Ala Glu Ala Phe Ala Asp Cys Gln Asp Leu
225   230   235   240

Val Pro Leu Glu Pro Tyr Leu Arg Ala Cys Gln Gln Asp Arg Cys Arg
            245   250   255

Cys Pro Gly Gly Asp Thr Cys Val Cys Ser Thr Val Ala Glu Phe Ser
            260   265   270

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Arg Gln Cys Ser His Ala Gly Gly Arg Pro Gly Asn Trp Arg Thr Ala
    275                 280             285

Thr Leu Cys Pro Lys Thr Cys Pro Gly Asn Leu Val Tyr Leu Glu Ser
    290             295             300

Gly Ser Pro Cys Met Asp Thr Cys Ser His Leu Glu Val Ser Ser Leu
305             310             315             320

Cys Glu Glu His Arg Met Asp Gly Cys Phe Cys Pro Glu Gly Thr Val
            325             330             335

Tyr Asp Asp Ile Gly Asp Ser Gly Cys Val Pro Val Ser Gln Cys His
            340             345             350

Cys Arg Leu His Gly His Leu Tyr Thr Pro Gly Gln Glu Ile Thr Asn
    355             360             365

Asp Cys Glu Gln Cys Val Cys Asn Ala Gly Arg Trp Val Cys Lys Asp
    370             375             380

Leu Pro Cys Pro Gly Thr Cys Ala Leu Glu Gly Gly Ser His Ile Thr
385             390             395             400

Thr Phe Asp Gly Lys Thr Tyr Thr Phe His Gly Asp Cys Tyr Tyr Val
            405             410             415

Leu Ala Lys Gly Asp His Asn Asp Ser Tyr Ala Leu Leu Gly Glu Leu
            420             425             430

Ala Pro Cys Gly Ser Thr Asp Lys Gln Thr Cys Leu Lys Thr Val Val
    435             440             445

Leu Leu Ala Asp Lys Lys Lys Asn Ala Val Val Phe Lys Ser Asp Gly
    450             455             460

Ser Val Leu Leu Asn Gln Leu Gln Val Asn Leu Pro His Val Thr Ala
465             470             475             480

Ser Phe Ser Val Phe Arg Pro Ser Ser Tyr His Ile Met Val Ser Met
            485             490             495

Ala Ile Gly Val Arg Leu Gln Val Gln Leu Ala Pro Val Met Gln Leu
            500             505             510

Phe Val Thr Leu Asp Gln Ala Ser Gln Gly Gln Val Gln Gly Leu Cys
            515             520             525

Gly Asn Phe Asn Gly Leu Glu Gly Asp Asp Phe Lys Thr Ala Ser Gly
    530             535             540

Leu Val Glu Ala Thr Gly Ala Gly Phe Ala Asn Thr Trp Lys Ala Gln
545             550             555             560

Ser Thr Cys His Asp Lys Leu Asp Trp Leu Asp Asp Pro Cys Ser Leu
            565             570             575
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Asn Ile Glu Ser Ala Asn Tyr Ala Glu His Trp Cys Ser Leu Leu Lys
            580             585             590

Lys Thr Glu Thr Pro Phe Gly Arg Cys His Ser Ala Val Asp Pro Ala
            595             600             605

Glu Tyr Tyr Lys Arg Cys Lys Tyr Asp Thr Cys Asn Cys Gln Asn Asn
    610             615             620

Glu Asp Cys Leu Cys Ala Ala Leu Ser Ser Tyr Ala Arg Ala Cys Thr
625             630             635             640

Ala Lys Gly Val Met Leu Trp Gly Trp Arg Glu His Val Cys Asn Lys
            645             650             655

Asp Val Gly Ser Cys Pro Asn Ser Gln Val Phe Leu Tyr Asn Leu Thr
            660             665             670

Thr Cys Gln Gln Thr Cys Arg Ser Leu Ser Glu Ala Asp Ser His Cys
            675             680             685

Leu Glu Gly Phe Ala Pro Val Asp Gly Cys Gly Cys Pro Asp His Thr
    690             695             700

Phe Leu Asp Glu Lys Gly Arg Cys Val Pro Leu Ala Lys Cys Ser Cys
705             710             715             720

Tyr His Arg Gly Leu Tyr Leu Glu Ala Gly Asp Val Val Val Arg Gln
            725             730             735

Glu Glu Arg Cys Val Cys Arg Asp Gly Arg Leu His Cys Arg Gln Ile
            740             745             750

Arg Leu Ile Gly Gln Ser Cys Thr Ala Pro Lys Ile His Met Asp Cys
            755             760             765

Ser Asn Leu Thr Ala Leu Ala Thr Ser Lys Pro Arg Ala Leu Ser Cys
    770             775             780

Gln Thr Leu Ala Ala Gly Tyr Tyr His Thr Glu Cys Val Ser Gly Cys
785             790             795             800

Val Cys Pro Asp Gly Leu Met Asp Asp Gly Arg Gly Gly Cys Val Val
            805             810             815

Glu Lys Glu Cys Pro Cys Val His Asn Asn Asp Leu Tyr Ser Ser Gly
            820             825             830

Ala Lys Ile Lys Val Asp Cys Asn Thr Cys Thr Cys Lys Arg Gly Arg
            835             840             845

Trp Val Cys Thr Gln Ala Val Cys His Gly Thr Cys Ser Ile Tyr Gly
    850             855             860

Ser Gly His Tyr Ile Thr Phe Asp Gly Lys Tyr Tyr Asp Phe Asp Gly
865             870             875             880

His Cys Ser Tyr Val Ala Val Gln Asp Tyr Cys Gly Gln Asn Ser Ser
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              885                    890                    895

Leu Gly Ser Phe Ser Ile Ile Thr Glu Asn Val Pro Cys Gly Thr Thr
          900                    905                    910

Gly Val Thr Cys Ser Lys Ala Ile Lys Ile Phe Met Gly Arg Thr Glu
          915                    920                    925

Leu Lys Leu Glu Asp Lys His Arg Val Val Ile Gln Arg Asp Glu Gly
      930                    935                    940

His His Val Ala Tyr Thr Thr Arg Glu Val Gly Gln Tyr Leu Val Val
945                    950                    955                    960

Glu Ser Ser Thr Gly Ile Ile Val Ile Trp Asp Lys Arg Thr Thr Val
              965                    970                    975

Phe Ile Lys Leu Ala Pro Ser Tyr Lys Gly Thr Val Cys Gly Leu Cys
          980                    985                    990

Gly Asn Phe Asp His Arg Ser Asn Asn Asp Phe Thr Thr Arg Asp His
      995                    1000                   1005

Met Val Val Ser Ser Glu Leu Asp Phe Gly Asn Ser Trp Lys Glu Ala
    1010                   1015                   1020

Pro Thr Cys Pro Asp Val Ser Thr Asn Pro Glu Pro Cys Ser Leu Asn
1025                   1030                   1035                   1040

Pro His Arg Arg Ser Trp Ala Glu Lys Gln Cys Ser Ile Leu Lys Ser
              1045                   1050                   1055

Ser Val Phe Ser Ile Cys His Ser Lys Val Asp Pro Lys Pro Phe Tyr
          1060                   1065                   1070

Glu Ala Cys Val His Asp Ser Cys Ser Cys Asp Thr Gly Gly Asp Cys
          1075                   1080                   1085

Glu Cys Phe Cys Ser Ala Val Ala Ser Tyr Ala Gln Glu Cys Thr Lys
          1090                   1095                   1100

Glu Gly Ala Cys Val Phe Trp Arg Thr Pro Asp Leu Cys Pro Ile Phe
1105                   1110                   1115                   1120

Cys Asp Tyr Tyr Asn Pro Pro His Glu Cys Glu Trp His Tyr Glu Pro
              1125                   1130                   1135

Cys Gly Asn Arg Ser Phe Glu Thr Cys Arg Thr Ile Asn Gly Ile His
          1140                   1145                   1150

Ser Asn Ile Ser Val Ser Tyr Leu Glu Gly Cys Tyr Pro Arg Cys Pro
          1155                   1160                   1165

Lys Asp Arg Pro Ile Tyr Glu Glu Asp Leu Lys Lys Cys Val Thr Ala
      1170                   1175                   1180

Asp Lys Cys Gly Cys Tyr Val Glu Asp Thr His Tyr Pro Pro Gly Ala
1185                   1190                   1195                   1200
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Ser Val Pro Thr Glu Glu Thr Cys Lys Ser Cys Val Cys Thr Asn Ser
            1205            1210            1215

Ser Gln Val Val Cys Arg Pro Glu Glu Gly Lys Ile Leu Asn Gln Thr
            1220            1225            1230

Gln Asp Gly Ala Phe Cys Tyr Trp Glu Ile Cys Gly Pro Asn Gly Thr
            1235            1240            1245

Val Glu Lys His Phe Asn Ile Cys Ser Ile Thr Thr Arg Pro Ser Thr
            1250            1255            1260

Leu Thr Thr Phe Thr Thr Ile Thr Leu Pro Thr Thr Pro Thr Ser Phe
1265            1270            1275            1280

Thr Thr Thr Thr Thr Thr Thr Thr Pro Thr Ser Ser Thr Val Leu Ser
                1285            1290            1295

Thr Thr Pro Lys Leu Cys Cys Leu Trp Ser Asp Trp Ile Asn Glu Asp
            1300            1305            1310

His Pro Ser Ser Gly Ser Asp Asp Gly Asp Arg Glu Pro Phe Asp Gly
            1315            1320            1325

Val Cys Gly Ala Pro Glu Asp Ile Glu Cys Arg Ser Val Lys Asp Pro
            1330            1335            1340

His Leu Ser Leu Glu Gln His Gly Gln Lys Val Gln Cys Asp Val Ser
1345            1350            1355            1360

Val Gly Phe Ile Cys Lys Asn Glu Asp Gln Phe Gly Asn Gly Pro Phe
            1365            1370            1375

Gly Leu Cys Tyr Asp Tyr Lys Ile Arg Val Asn Cys Cys Trp Pro Met
            1380            1385            1390

Asp Lys Cys Ile Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ser Pro
            1395            1400            1405

Pro Pro Thr Thr Thr Thr Thr Leu Pro Pro Thr Thr Thr Pro Ser Pro
            1410            1415            1420

Pro Thr Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro
1425            1430            1435            1440

Pro Ile Thr Thr Thr Thr Thr Pro Leu Pro Thr Thr Thr Pro Ser Pro
            1445            1450            1455

Pro Ile Ser Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro
            1460            1465            1470

Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr
            1475            1480            1485

Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Met
            1490            1495            1500
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Thr Thr Pro Ile Thr Pro Pro Ala Ser Thr Thr Thr Leu Pro Pro Thr
1505   1510   1515   1520

Thr Thr Pro Ser Pro Pro Thr Thr Thr Thr Thr Thr Pro Pro Pro Thr
            1525   1530   1535

Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ile Thr Pro Pro Thr Ser
            1540   1545   1550

Thr Thr Thr Leu Pro Pro Thr Thr Thr Pro Ser Pro Pro Pro Thr Thr
            1555   1560   1565

Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr
            1570   1575   1580

Thr Pro Ser Pro Pro Thr Ile Thr Thr Thr Thr Pro Pro Pro Thr Thr
1585   1590   1595   1600

Thr Pro Ser Pro Pro Thr Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr
            1605   1610   1615

Thr Pro Ser Pro Pro Thr Thr Thr Pro Ile Thr Pro Pro Thr Ser Thr
            1620   1625   1630

Thr Thr Leu Pro Pro Thr Thr Thr Pro Ser Pro Pro Pro Thr Thr Thr
            1635   1640   1645

Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Thr
            1650   1655   1660

Pro Ser Pro Pro Ile Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr
1665   1670   1675   1680

Pro Ser Ser Pro Ile Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Met
            1685   1690   1695

Thr Thr Pro Ser Pro Thr Thr Thr Pro Ser Ser Pro Ile Thr Thr Thr
            1700   1705   1710

Thr Thr Pro Ser Ser Thr Thr Thr Pro Ser Pro Pro Pro Thr Thr Met
            1715   1720   1725

Thr Thr Pro Ser Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Met
            1730   1735   1740

Thr Thr Leu Pro Pro Thr Thr Thr Ser Ser Pro Leu Thr Thr Thr Pro
1745   1750   1755   1760

Leu Pro Pro Ser Ile Thr Pro Pro Thr Phe Ser Pro Phe Ser Thr Thr
            1765   1770   1775

Thr Pro Thr Thr Pro Cys Val Pro Leu Cys Asn Trp Thr Gly Trp Leu
            1780   1785   1790

Asp Ser Gly Lys Pro Asn Phe His Lys Pro Gly Gly Asp Thr Glu Leu
            1795   1800   1805

Ile Gly Asp Val Cys Gly Pro Gly Trp Ala Ala Asn Ile Ser Cys Arg

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        1810              1815              1820

Ala Thr Met Tyr Pro Asp Val Pro Ile Gly Gln Leu Gly Gln Thr Val
1825            1830            1835            1840

Val Cys Asp Val Ser Val Gly Leu Ile Cys Lys Asn Glu Asp Gln Lys
            1845            1850            1855

Pro Gly Gly Val Ile Pro Met Ala Phe Cys Leu Asn Tyr Glu Ile Asn
            1860            1865            1870

Val Gln Cys Cys Glu Cys Val Thr Gln Pro Thr Thr Met Thr Thr Thr
        1875            1880            1885

Thr Thr Glu Asn Pro Thr Pro Pro Thr Thr Thr Pro Ile Thr Thr Thr
        1890            1895            1900

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
1905            1910            1915            1920

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
            1925            1930            1935

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
            1940            1945            1950

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
            1955            1960            1965

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
        1970            1975            1980

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
1985            1990            1995            2000

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
            2005            2010            2015

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
            2020            2025            2030

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
            2035            2040            2045

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
        2050            2055            2060

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
2065            2070            2075            2080

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
            2085            2090            2095

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
            2100            2105            2110

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
        2115            2120            2125
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324

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
    2130   2135   2140

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
2145   2150   2155   2160

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
            2165   2170   2175

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
            2180   2185   2190

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
            2195   2200   2205

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
    2210   2215   2220

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
2225   2230   2235   2240

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
                2245   2250   2255

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
            2260   2265   2270

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
    2275   2280   2285

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
    2290   2295   2300

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
2305   2310   2315   2320

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
            2325   2330   2335

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
            2340   2345   2350

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
            2355   2360   2365

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
    2370   2375   2380

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
2385   2390   2395   2400

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
            2405   2410   2415

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
        2420   2425   2430

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Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
        2435            2440            2445

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
        2450            2455            2460

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
2465            2470            2475            2480

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
            2485            2490            2495

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
        2500            2505            2510

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
        2515            2520            2525

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
    2530            2535            2540

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
2545            2550            2555            2560

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Val Thr Pro
        2565            2570            2575

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
        2580            2585            2590

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
        2595            2600            2605

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
    2610            2615            2620

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
2625            2630            2635            2640

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
        2645            2650            2655

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
        2660            2665            2670

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
    2675            2680            2685

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
    2690            2695            2700

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
2705            2710            2715            2720

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
        2725            2730            2735

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
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                  2740                    2745                    2750

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
        2755              2760              2765

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
        2770              2775              2780

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
2785              2790              2795              2800

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
        2805              2810              2815

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
        2820              2825              2830

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
        2835              2840              2845

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
        2850              2855              2860

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
2865              2870              2875              2880

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
        2885              2890              2895

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
        2900              2905              2910

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
        2915              2920              2925

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
        2930              2935              2940

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
2945              2950              2955              2960

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
        2965              2970              2975

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
        2980              2985              2990

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
        2995              3000              3005

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
        3010              3015              3020

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
3025              3030              3035              3040

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
        3045              3050              3055
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Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
        3060   3065   3070

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
        3075   3080   3085

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
        3090   3095   3100

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
3105   3110   3115   3120

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
            3125   3130   3135

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
        3140   3145   3150

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
        3155   3160   3165

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
        3170   3175   3180

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
3185   3190   3195   3200

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
                3205   3210   3215

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
            3220   3225   3230

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
        3235   3240   3245

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
    3250   3255   3260

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
3265   3270   3275   3280

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
            3285   3290   3295

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
        3300   3305   3310

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
        3315   3320   3325

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
    3330   3335   3340

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
3345   3350   3355   3360

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Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
            3365            3370            3375

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
            3380            3385            3390

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
        3395            3400            3405

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
    3410            3415            3420

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
3425            3430            3435            3440

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
            3445            3450            3455

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
            3460            3465            3470

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
            3475            3480            3485

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
    3490            3495            3500

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
3505            3510            3515            3520

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
            3525            3530            3535

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
            3540            3545            3550

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
        3555            3560            3565

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
    3570            3575            3580

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
3585            3590            3595            3600

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
            3605            3610            3615

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
        3620            3625            3630

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
        3635            3640            3645

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
    3650            3655            3660

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
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3665   3670   3675   3680

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
                    3685   3690   3695

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
                3700   3705   3710

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
        3715   3720   3725

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
        3730   3735   3740

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
3745   3750   3755   3760

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
            3765   3770   3775

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
        3780   3785   3790

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
        3795   3800   3805

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
        3810   3815   3820

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
3825   3830   3835   3840

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
            3845   3850   3855

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
            3860   3865   3870

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
        3875   3880   3885

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
        3890   3895   3900

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
3905   3910   3915   3920

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
            3925   3930   3935

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
        3940   3945   3950

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
        3955   3960   3965

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
        3970   3975   3980

330

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
3985   3990   3995   4000

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
                4005   4010   4015

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
                4020   4025   4030

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
        4035   4040   4045

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
    4050   4055   4060

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
4065   4070   4075   4080

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
                4085   4090   4095

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
        4100   4105   4110

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
        4115   4120   4125

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
    4130   4135   4140

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
4145   4150   4155   4160

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
                4165   4170   4175

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
        4180   4185   4190

Thr Gln Thr Gly Pro Pro Thr His Thr Ser Thr Ala Pro Ile Ala Glu
        4195   4200   4205

Leu Thr Thr Ser Asn Pro Pro Glu Ser Ser Thr Pro Gln Thr Ser
        4210   4215   4220

Arg Ser Thr Ser Ser Pro Leu Thr Glu Ser Thr Thr Leu Leu Ser Thr
4225   4230   4235   4240

Leu Pro Pro Ala Ile Glu Met Thr Ser Thr Ala Pro Pro Ser Thr Pro
                4245   4250   4255

Thr Ala Pro Thr Thr Thr Ser Gly Gly His Thr Leu Ser Pro Pro Pro
            4260   4265   4270

Ser Thr Thr Thr Ser Pro Pro Gly Thr Pro Thr Arg Gly Thr Thr Thr
        4275   4280   4285

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Gly Ser Ser Ser Ala Pro Thr Pro Ser Thr Val Gln Thr Thr Thr Thr
    4290            4295            4300

Ser Ala Trp Thr Pro Thr Pro Thr Pro Leu Ser Thr Pro Ser Ile Ile
4305            4310            4315            4320

Arg Thr Thr Gly Leu Arg Pro Tyr Pro Ser Ser Val Leu Ile Cys Cys
            4325            4330            4335

Val Leu Asn Asp Thr Tyr Tyr Ala Pro Gly Glu Glu Val Tyr Asn Gly
            4340            4345            4350

Thr Tyr Gly Asp Thr Cys Tyr Phe Val Asn Cys Ser Leu Ser Cys Thr
            4355            4360            4365

Leu Glu Phe Tyr Asn Trp Ser Cys Pro Ser Thr Pro Ser Pro Thr Pro
    4370            4375            4380

Thr Pro Ser Lys Ser Thr Pro Thr Pro Ser Lys Pro Ser Ser Thr Pro
4385            4390            4395            4400

Ser Lys Pro Thr Pro Gly Thr Lys Pro Pro Glu Cys Pro Asp Phe Asp
            4405            4410            4415

Pro Pro Arg Gln Glu Asn Glu Thr Trp Trp Leu Cys Asp Cys Phe Met
            4420            4425            4430

Ala Thr Cys Lys Tyr Asn Asn Thr Val Glu Ile Val Lys Val Glu Cys
            4435            4440            4445

Glu Pro Pro Pro Met Pro Thr Cys Ser Asn Gly Leu Gln Pro Val Arg
    4450            4455            4460

Val Glu Asp Pro Asp Gly Cys Cys Trp His Trp Glu Cys Asp Cys Tyr
4465            4470            4475            4480

Cys Thr Gly Trp Gly Asp Pro His Tyr Val Thr Phe Asp Gly Leu Tyr
            4485            4490            4495

Tyr Ser Tyr Gln Gly Asn Cys Thr Tyr Val Leu Val Glu Glu Ile Ser
            4500            4505            4510

Pro Ser Val Asp Asn Phe Gly Val Tyr Ile Asp Asn Tyr His Cys Asp
            4515            4520            4525

Pro Asn Asp Lys Val Ser Cys Pro Arg Thr Leu Ile Val Arg His Glu
    4530            4535            4540

Thr Gln Glu Val Leu Ile Lys Thr Val His Met Met Pro Met Gln Val
4545            4550            4555            4560

Gln Val Gln Val Asn Arg Gln Ala Val Ala Leu Pro Tyr Lys Lys Tyr
            4565            4570            4575

Gly Leu Glu Val Tyr Gln Ser Gly Ile Asn Tyr Val Val Asp Ile Pro
            4580            4585            4590

Glu Leu Gly Val Leu Val Ser Tyr Asn Gly Leu Ser Phe Ser Val Arg
```

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                4595                    4600                    4605

Leu Pro Tyr His Arg Phe Gly Asn Asn Thr Lys Gly Gln Cys Gly Thr
    4610                4615                4620

Cys Thr Asn Thr Thr Ser Asp Asp Cys Ile Leu Pro Ser Gly Glu Ile
4625                4630                4635                4640

Val Ser Asn Cys Glu Ala Ala Ala Asp Gln Trp Leu Val Asn Asp Pro
            4645                4650                4655

Ser Lys Pro His Cys Pro His Ser Ser Ser Thr Thr Lys Arg Pro Ala
            4660                4665                4670

Val Thr Val Pro Gly Gly Gly Lys Thr Thr Pro His Lys Asp Cys Thr
            4675                4680                4685

Pro Ser Pro Leu Cys Gln Leu Ile Lys Asp Ser Leu Phe Ala Gln Cys
        4690                4695                4700

His Ala Leu Val Pro Pro Gln His Tyr Tyr Asp Ala Cys Val Phe Asp
4705                4710                4715                4720

Ser Cys Phe Met Pro Gly Ser Ser Leu Glu Cys Ala Ser Leu Gln Ala
            4725                4730                ·4735

Tyr Ala Ala Leu Cys Ala Gln Gln Asn Ile Cys Leu Asp Trp Arg Asn
        4740                4745                4750

His Thr His Gly Ala Cys Leu Val Glu Cys Pro Ser His Arg Glu Tyr
        4755                4760                4765

Gln Ala Cys Gly Pro Ala Glu Glu Pro Thr Cys Lys Ser Ser Ser Ser
    4770                4775                4780

Gln Gln Asn Asn Thr Val Leu Val Glu Gly Cys Phe Cys Pro Glu Gly
4785                4790                4795                4800

Thr Met Asn Tyr Ala Pro Gly Phe Asp Val Cys Val Lys Thr Cys Gly
            4805                4810                4815

Cys Val Gly Pro Asp Asn Val Pro Arg Glu Phe Gly Glu His Phe Glu
        4820                4825                4830

Phe Asp Cys Lys Asn Cys Val Cys Leu Glu Gly Gly Ser Gly Ile Ile
        4835                4840                4845

Cys Gln Pro Lys Arg Cys Ser Gln Lys Pro Val Thr His Cys Val Glu
    4850                4855                4860

Asp Gly Thr Tyr Leu Ala Thr Glu Val Asn Pro Ala Asp Thr Cys Cys
4865                4870                4875                4880

Asn Ile Thr Val Cys Lys Cys Asn Thr Ser Leu Cys Lys Glu Lys Pro
            4885                4890                4895

Ser Val Cys Pro Leu Gly Phe Glu Val Lys Ser Lys Met Val Pro Gly
            4900                4905                4910
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Arg Cys Cys Pro Phe Tyr Trp Cys Glu Ser Lys Gly Val Cys Val His
        4915   4920   4925

Gly Asn Ala Glu Tyr Gln Pro Gly Ser Pro Val Tyr Ser Ser Lys Cys
    4930   4935   4940

Gln Asp Cys Val Cys Thr Asp Lys Val Asp Asn Asn Thr Leu Leu Asn
4945   4950   4955   4960

Val Ile Ala Cys Thr His Val Pro Cys Asn Thr Ser Cys Ser Pro Gly
            4965   4970   4975

Phe Glu Leu Met Glu Ala Pro Gly Glu Cys Cys Lys Lys Cys Glu Gln
            4980   4985   4990

Thr His Cys Ile Ile Lys Arg Pro Asp Asn Gln His Val Ile Leu Lys
        4995   5000   5005

Pro Gly Asp Phe Lys Ser Asp Pro Lys Asn Asn Cys Thr Phe Phe Ser
    5010   5015   5020

Cys Val Lys Ile His Asn Gln Leu Ile Ser Ser Val Ser Asn Ile Thr
5025   5030   5035   5040

Cys Pro Asn Phe Asp Ala Ser Ile Cys Ile Pro Gly Ser Ile Thr Phe
            5045   5050   5055

Met Pro Asn Gly Cys Cys Lys Thr Cys Thr Pro Arg Asn Glu Thr Arg
            5060   5065   5070

Val Pro Cys Ser Thr Val Pro Val Thr Thr Glu Val Ser Tyr Ala Gly
        5075   5080   5085

Cys Thr Lys Thr Val Leu Met Asn His Cys Ser Gly Ser Cys Gly Thr
    5090   5095   5100

Phe Val Met Tyr Ser Ala Lys Ala Gln Ala Leu Asp His Ser Cys Ser
5105   5110   5115   5120

Cys Cys Lys Glu Glu Lys Thr Ser Gln Arg Glu Val Val Leu Ser Cys
            5125   5130   5135

Pro Asn Gly Gly Ser Leu Thr His Thr Tyr Thr His Ile Glu Ser Cys
            5140   5145   5150

Gln Cys Gln Asp Thr Val Cys Gly Leu Pro Thr Gly Thr Ser Arg Arg
        5155   5160   5165

Ala Arg Arg Ser Pro Arg His Leu Gly Ser Gly
    5170   5175

<210> 1069
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 1069
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tttagagcta gaagccacga ctgggaccac tggagacact gaagaaggca ggggcccta 120
gagtcttggt tgccaaacag atttgcagat caaggagaac ccaggagttt caaagaagcg 180
ctagtaaggt ctctgagatc cttgcactag ctacatcctc agggtaggag gaagatggct 240
tccagaagca tgcggctgct cctattgctg agctgcctgg ccaaaacagg agtcctgggt 300
gatatcatca tgagacccag ctgtgctcct ggatggtttt accacaagtc caattgctat 360
ggttacttca ggaagctgag gaactggtct gatgccgagc tcgagtgtca gtcttacgga 420
aacggagccc acctggcatc tatcctgagt ttaaaggaag ccagcaccat agcagagtac 480
ataagtggct atcagagaag ccagccgata tggattggcc tgcacgaccc acagaagagg 540
cagcagtggc agtggattga tggggccatg tatctgtaca gatcctggtc tggcaagtcc 600
atgggtggga acaagcactg tgctgagatg agctccaata caacttttt aacttggagc 660
agcaacgaat gcaacaagcg ccaacacttc ctgtgcaagt accgaccata gagcaagaat 720
caagattctg ctaactcctg cacagccccg tcctcttcct ttctgctagc ctggctaaat 780
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taaatgtttg ccccgccatc cctttccaca gtatccttct tccctcctcc cctgtctctg 960
gctgtctcga gcagtctaga agagtgcatc tccagcctat gaaacagctg ggtctttggc 1020
cataagaagt aaagatttga agacagaagg aagaaactca ggagtaagct tctagccccc 1080
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ctcctgcttg tttttccttt ggccatggga aag 1173
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<210> 1070
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1070
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Met Ala Ser Arg Ser Met Arg Leu Leu Leu Leu Leu Ser Cys Leu Ala
                5                   10                  15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
            20                  25                  30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
        35                  40                  45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
    50                  55                  60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65                  70                  75                  80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
                85                  90                  95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100                 105                 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115                 120                 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
        130                 135                 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145                 150                 155
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<210>. 1071
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 1071

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taaggtctct gagatccttg cactagctac atcctcaggg taggaggaag atggcttcca 120
gaagcatgcg gctgctccta ttgctgagct gcctggccaa aacaggagtc ctgggtgata 180
tcatcatgag acccagctgt gctcctggat ggttttacca caagtccaat tgctatggtt 240
acttcaggaa gctgaggaac tggtctgatg ccgagctcga gtgtcagtct tacggaaacg 300
gagcccacct ggcatctatc ctgagtttaa aggaagccag caccatagca gagtacataa 360
gtggctatca gagaagccag ccgatatgga ttggcctgca cgacccacag aagaggcagc 420
agtggcagtg gattgatggg gccatgtatc tgtacagatc ctggtctggc aagtccatgg 480
gtgggaacaa gcactgtgct gagatgagct ccaataacaa cttttaact tggagcagca 540
acgaatgcaa caagcgccaa cacttcctgt gcaagtaccg .accatagagc aagaatcaag 600
attctgctaa ctcctgcaca gccccgtcct cttcctttct gctagcctgg ctaaatctgc 660
tcattatttc agaggggaaa cctagcaaac taagagtgat aagggcccta ctacactggc 720
ttttttaggc ttagagacag aaactttagc attggcccag tagtggcttc tagctctaaa 780
tgtttgcccc gccatccctt tccacagtat ccttcttccc tcctcccctg tctctggctg 840
tctcgagcag tctagaagag tgcatctcca gcctatgaaa cagctgggtc tttggccata 900
agaagtaaag atttgaagac agaaggaaga aactcaggag taagcttcta gaccccttca 960
gcttctacac ccttctgccc tctctccatt gcctgcaccc cacccccagcc actcaactcc 1020
tgcttgtttt tcctttggcc ataggaaggt ttaccagtag aatccttgct aggttgatgt 1080
gggccataca ttcctttaat aaaccattgt gtac 1114
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<210> 1072
<211> 1152
<212> DNA
<213> Homo sapiens

<400> 1072

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atcaaggaga acccaggagt ttcaaagaag cgctagtaag gtctctgaga tccttgcact 120
agctacatcc tcagggtagg aggaagatgg cttccagaag catgcggctg ctcctattgc 180
tgagctgcct ggccaaaaca ggagtcctgg gtgatatcat catgagaccc agctgtgctc 240
ctggatggtt ttaccacaag tccaattgct atggttactt caggaagctg aggaactggt 300
ctgatgccga gctcgagtgt cagtcttacg gaaacggagc ccacctggca tctatcctga 360
gtttaaagga gccagcacc atagcagagt acataagtgg ctatcagaga gccagccga 420
tatggattgg cctgcacgac ccacagaaga ggcagcagtg gcagtggatt gatggggcca 480
tgtatctgta cagatcctgg tctggcaagt ccatgggtgg gaacaagcac tgtgctgaga 540
tgagctccaa taacaacttt ttaacttgga gcagcaacga atgcaacaag cgccaacact 600
tcctgtgcaa gtaccgacca tagagcaaga atcaagattc tgctaactcc tgcacagccc 660
cgtcctcttc ctttctgcta gcctggctaa atctgctcat tatttcagag gggaaaccta 720
gcaaactaag agtgataagg ccctactac actggctttt ttaggcttag agacagaaac 780
tttagcattg gcccagtagt ggcttctagc tctaaatgtt tgccccgcca tcccttttcca 840
cagtatcctt cttccctcct cccctgtctc tggctgtctc gagcagtcta gaagagtgca 900
tctccagcct atgaaacagc tgggtctttg gccataagaa gtaaagattt gaagacagaa 960
ggaagaaact caggagtaag cttctagccc ccttcagctt ctacacccctt ctgccctctc 1020
tccattgcct gcaccccacc ccagccactc aactcctgct gttttttcct ttggccatgg 1080
gaaggtttac cagtagaatc cttgctaggt tgatgtgggc catacattcc tttaataaac 1140
cattgtgtac at 1152
```

<210> 1073
<211> 474

<212> DNA
<213> Homo sapiens

<400> 1073
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ctgggtgata tcatcatgag acccagctgt gctcctggat ggttttacca caagtccaat 120
tgctatggtt acttcaggaa gctgaggaac tggtctgatg ccgagctcga gtgtcagtct 180
tacggaaacg gagcccacct ggcatctatc ctgagtttaa aggaagccag caccatagca 240
gagtacataa gtggctatca gagaagccag ccgatatgga ttggcctgca cgacccacag 300
aagaggcagc agtggcagtg gattgatggg gccatgtatc tgtacagatc ctggtctggc 360
aagtccatgg gtgggaacaa gcactgtgct gagatgagct ccaataacaa cttttttaact 420
tggagcagca acgaatgcaa caagcgccaa cacttcctgt gcaagtaccg acca   474

<210> 1074
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 1074
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taaggtctct gagatccttg cactagctac atcctcaggg taggaggaag atggcttcca 120
gaagcatgcg gctgctccta ttgctgagct gcctggccaa aacaggagtc ctgggtgata 180
tcatcatgag acccagctgt gctcctggat ggttttacca caagtccaat tgctatggtt 240
acttcaggaa gctgaggaac tggtctgatg ccgagctcga gtgtcagtct tacggaaacg 300
gagcccacct ggcatctatc ctgagtttaa aggaagccag caccatagca gagtacataa 360
gtggctatca gagaagccag ccgatatgga ttggcctgca cgacccacag aagaggcagc 420
agtggcagtg gattgatggg gccatgtatc tgtacagatc ctggtctggc aagtccatgg 480
gtgggaacaa gcactgtgct gagatgagct ccaataacaa cttttttaact tggagcagca 540
acgaatgcaa caagcgccaa cacttcctgt gcaagtaccg accatagagc aagaatcaag 600
attctgctaa ctcctgcaca gccccgtcct cttcctttct gctagcctgg ctaaatctgc 660
tcattatttc agaggggaaa cctagcaaac taagagtgat aagggcccta ctacactggc 720
ttttttaggc ttagagacag aaactttagc attggcccag tagtggcttc tagctctaaa 780
tgtttgcccc gccatccctt tccacagtat ccttcttccc tcctcccctg tctctggctg 840
tctcgagcag tctagaagag tgcatctcca gcctatgaaa cagctgggtc tttggccata 900
agaagtaaag atttgaagac agaaggaaga aactcaggag taagcttcta gacccccttca 960
gcttctacac ccttctgccc tctctccatt gcctgcaccc caccccagcc actcaactcc 1020
tgcttgtttt ccttttggcc ataggaaggt ttaccagtag aatccttgct aggttgatgt 1080
gggccataca ttcctttaat aaaccattgt gtac   1114

<210> 1075
<211> 614
<212> DNA
<213> Homo sapiens

<400> 1075
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cagggtagga ggaagatggc ttccagaagc atgcggctgc tccttattgct gagctgcctg 180
gccaaaacag gagtcctggg tgatatcatc atgagaccca gctgtgctcc tggatggttt 240
taccacaagt ccaattgcta tggttacttc aggaagctga ggaactggtc tgatgccgag 300
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gccagcacca tagcagagta cataagtggc tatcagagaa gccagccgat atggattggc 420
ctgcacgacc cacagaagag gcagcagtgg cagtggattg atggggccat gtatctgtac 480
agatcctggt ctggcaagtc catgggtggg aacaagcact gtgctgagat gagctccaat 540
aacaactttt taacttggag cagcaacgaa tgcaacaagc gccaacactt cctgtgcaag 600
taccgaccat agag   614

<210> 1076

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<211> 3345
<212> DNA
<213> Homo sapiens

<400> 1076
gaattccgtc tcgaccactg aatggaagaa aaggactttt aaccaccatt ttgtgactta 60
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cttcttatgc tttatttggc aactggatat ggccaagagg ggaagtttag tggacccctg 180
aaacccatga cattttctat ttatgaaggc caagaaccga gtcaaattat attccagttt 240
aaggccaatc ctcctgctgt gacttttgaa ctaactgggg agacagacaa catatttgtg 300
atagaacggg agggacttct gtattacaac agagccttgg acagggaaac aagatctact 360
cacaatctcc aggttgcagc cctggacgct aatggaatta tagtggaggg tccagtccct 420
atcaccatag aagtgaagga catcaacgac aatcgaccca cgtttctcca gtcaaagtac 480
gaaggctcag taaggcagaa ctctcgccca ggaagcccct tcttgtatgt caatgccaca 540
gacctggatg atccggccac tcccaatggc cagctttatt accagattgt catccagctt 600
cccatgatca acaatgtcat gtactttcag atcaacaaca aacgggagc catctctctt 660
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tcagtgaagg acatgggagg ccagagtgag aattccttca gtgataccac atctgtggat 780
atcatagtga cagagaatat ttggaaagca ccaaaacctg tggagatggt ggaaaactca 840
actgatcctc accccatcaa aatcactcag gtgcggtgga atgatcccgg tgcacaatat 900
tccttagttg acaaagagaa gctgccaaga ttcccatttt caattgacca ggaaggagat 960
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caagcgaaag tcagtgagga tgtagctata ggcactaaag tgggcaatgt gactgccaag 1860
gatccagaag gtctggacat aagctattca ctgaggggag acacaagagg ttggcttaaa 1920
attgaccacg tgactggtga gatctttagt gtggctccat ggacagaga agccggaagt 1980
ccatatcggg tacaagtggt ggccacagaa gtaggggggt cttccttaag ctctgtgtca 2040
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ttacaaaacg actgggaagt ttccaaaatc aatggtactc atgcccgact gtctaccagg 2280
cacacagact ttgaggagag ggcgtatgtc gtcttgatcc gcatcaatga tgggggtcgg 2340
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aaggataaag gcaaagataa tgttgaaagt gctcaagcat ctgaagtcaa acctctgaga 2580
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tctcatccta ttacttttca ctaacgtgc attataattt tttaaacaga tattccctct 2700
tgtcctttaa tatttgctaa atatttcttt tttgaggtgg agtcttgctc tgtcgcccag 2760
gctggagtac agtggtgtga tcccagctca ctgcaacctc cgcctcctgg gttcacatga 2820
ttctcctgcc tcagcttcct aagtagctgg gtttacaggc acccaccacc atgcccagct 2880
aattttgta ttttaatag agacggggtt tcgccatttg gccaggctgg tcttgaactc 2940
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cctacttaga tatttcatgt gctatagaca ttagagagat ttttcatttt tccatgacat 3060
ttttcctctc tgcaaatggc ttagctactt gtgttttcc cttttggggc aagacagact 3120
cattaaatat tctgtacatt ttttctttat caaggagata tatcagtgtt gtctcataga 3180
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338

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actgcctgga ttccatttat gtttttttctg attccatcct gtgtcccctt catccttgac 3240
tcctttggta tttcactgaa tttcaaacat ttgtcagaga agaaaaaagt gaggactcag 3300
gaaaaataaa taaataaaag aacagccttt tgcggccgcg aattc            3345
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<210> 1077
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1077
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                    5                   10                  15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
                20                  25                  30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
            35                  40                  45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
        50                  55                  60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65                  70                  75                  80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
                85                  90                  95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100                 105                 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115                 120                 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
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Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
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Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
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Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
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Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
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Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
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His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100                 105                 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115                 120                 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
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Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
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Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
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Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
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Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
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His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100                 105                 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115                 120                 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
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Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
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Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
                85   90   95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100   105   110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115   120   125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
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Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
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            20   25   30

Pro Met Thr Phe Ser Ile Tyr Glu Gly Gln Glu Pro Ser Gln Ile Ile
        35   40   45

Phe Gln Phe Lys Ala Asn Pro Pro Ala Val Thr Phe Glu Leu Thr Gly
    50   55   60

Glu Thr Asp Asn Ile Phe Val Ile Glu Arg Glu Gly Leu Leu Tyr Tyr
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Ala Ala Leu Asp Ala Asn Gly Ile Ile Val Glu Gly Pro Val Pro Ile
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Thr Ile Glu Val Lys Asp Ile Asn Asp Asn Arg Pro Thr Phe Leu Gln
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Ser Lys Tyr Glu Gly Ser Val Arg Gln Asn Ser Arg Pro Gly Lys Pro
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Phe Leu Tyr Val Asn Ala Thr Asp Leu Asp Asp Pro Ala Thr Pro Asn
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Gly Gln Leu Tyr Tyr Gln Ile Val Ile Gln Leu Pro Met Ile Asn Asn
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Val Met Tyr Phe Gln Ile Asn Asn Lys Thr Gly Ala Ile Ser Leu Thr
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Arg Glu Gly Ser Gln Glu Leu Asn Pro Ala Lys Asn Pro Ser Tyr Asn
            195                 200                 205

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Ser Asp Thr Thr Ser Val Asp Ile Ile Val Thr Glu Asn Ile Trp Lys
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Ala Pro Lys Pro Val Glu Met Val Glu Asn Ser Thr Asp Pro His Pro
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Ile Lys Ile Thr Gln Val Arg Trp Asn Asp Pro Gly Ala Gln Tyr Ser
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Glu Gly Asp Ile Tyr Val Thr Gln Pro Leu Asp Arg Glu Glu Lys Asp
            290                 295                 300

Ala Tyr Val Phe Tyr Ala Val Ala Lys Asp Glu Tyr Gly Lys Pro Leu
305                 310                 315                 320

Ser Tyr Pro Leu Glu Ile His Val Lys Val Lys Asp Ile Asn Asp Asn
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Pro Pro Thr Cys Pro Ser Pro Val Thr Val Phe Glu Val Gln Glu Asn
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Glu Glu Asn Thr Ala Asn Ser Phe Leu Asn Tyr Arg Ile Val Glu Gln
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Cys Phe Val Gln Ile Asn Val Ile Asp Ile Asn Asp Gln Ile Pro Ile
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Phe Glu Lys Ser Asp Tyr Gly Asn Leu Thr Leu Ala Glu Asp Thr Asn
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Phe Thr Gly Ser Ser Lys Ile Leu Tyr His Ile Ile Lys Gly Asp Ser
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Glu Gly Arg Leu Gly Val Asp Thr Asp Pro His Thr Asn Thr Gly Tyr
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Tyr Asn Ala Ser Ser Phe Ala Lys Phe Thr Leu Ile Val Thr Asp Val
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Glu Asp Val Ala Ile Gly Thr Lys Val Gly Asn Val Thr Ala Lys Asp
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Trp Leu Lys Ile Asp His Val Thr Gly Glu Ile Phe Ser Val Ala Pro
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Gly Leu Phe Phe Cys His Pro Leu Ser Ala Pro Gly Ser Leu Ile Phe
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Glu Ala Thr Asp Asp Asp Gln His Leu Phe Arg Gly Pro His Phe Thr
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Glu Gly Ser Cys Phe Arg Pro Ala Gly His Gln Thr Gly Ile Pro Thr
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785   790   795   800

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tcagatttga gcattaacag gtattttcac atacttgact tcaatatgct taaagtgagg 180
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Cys Leu Ile Phe Pro Ser Gln Ile Arg Phe Glu His
        35   40

(54) Title: COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS OF COLON CANCER AND METHODS FOR THEIR USE

(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as colon cancer, are disclosed. Compositions may comprise one or more colon tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a colon tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as colon cancer. Diagnostic methods based on detecting a colon tumor protein, or mRNA encoding such a protein, in a sample are also provided.

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7   C12N15/12   C12N15/62   C07K14/47   C07K16/14   C12Q1/68
         G01N33/53   G01N33/574   A61K39/00   A61K39/395   A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7   C12N   C07K   C12Q   G01N   A61K   A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, SEQUENCE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 929 033 A (TANG, Y.T. ET AL.) 27 July 1999 (1999-07-27)	1,2,4,5, 7-17,21, 31,40-60
A	abstract; figure 1 column 2, line 46 -column 4, line 14 column 4, line 62 -column 19, line 38 column 20, line 42 -column 27, line 30 column 27, line 63 -column 29, line 29 column 32 -column 37; examples 4-12 SEQ ID NOS: 1 and 2 column 37 -column 44 column 45 -column 46; claims 1-14,17,18	6,18-39

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[X] Further documents are listed in the continuation of box C.		[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
9 August 2001	3 0. 10. 01

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Fuchs, U

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Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 60161 A (DIADEXUS LLC) 25 November 1999 (1999-11-25)	1,2,4,5, 7-16, 40-60
A	abstract page 2, line 34 -page 11, line 30 clone ID NO: 2348122, SEQ ID NOS: 7 and 10 page 13, line 1 -page 16, line 6; table 1 page 28, line 1 -page 31, line 25; table 9 page 32 -page 33; claims 1-6 ---	6,17-39
X	WO 99 63088 A (GENENTECH, INC.) 9 December 1999 (1999-12-09)	1,2,4,5, 7-17,58, 59
A	abstract page 1, line 23 -page 2, line 6 PRO698 page 7, line 19 - line 29 page 63, line 33 -page 64, line 15 page 280, line 25 -page 284, line 23 page 286, line 16 - line 19 page 300, line 36 - line 37 page 317, line 24 - line 30 page 364, line 10 - line 32 page 365, line 16 -page 373, line 20 page 391 -page 392; example 19 page 488 -page 495; examples 139-145 ATCC DEP NO: 209904 page 497; table 2 page 501 -page 508; claims 1-26 page 546 -page 548; figures 37-39 ---	40-57,60
X	WO 99 01020 A (HUMAN GENOME SCIENCES, INC.) 14 January 1999 (1999-01-14)	1,4, 7-22,31, 54-60
A	abstract page 2, line 1 - line 8 gene ID NO: 13 page 22, line 15 -page 24, line 10 page 34 -page 54, line 37; table 1 page 57, line 7 - line 32 page 63, line 1 -page 70, line 5 SEQ ID NO: 23 page 129 -page 130 SEQ ID NO: 85 page 162 -page 163 page 174 -page 177; claims 1-17,19,21 ---	2,5,6, 23-30, 32-53

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Form PCT/ISA/210 (continuation of second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL, HEIDELBERG, FRG [Online] 12 November 1998 (1998-11-12) LIU, W.L. ET AL.: "Homo sapiens GW112 protein (GW112) mRNA, complete cds" Database accession no. AF097021 XP002174317 the whole document	1,4, 7-10,12, 16,58,59
X	-& DATABASE EMBL, HEIDELBERG, FRG [Online] GW112 protein, 1 May 1999 (1999-05-01) LIU, W.L. ET AL.: "Identification and characterization of novel full-length cDNAs differentially expressed in human hematopoietic lineages" retrieved from HOMO SAPIENS Database accession no. 095362 XP002174318 the whole document	1,4, 7-10,12, 16,58,59

X	DATABASE EMBL, HEIDELBERG, FRG [Online] 18 April 1997 (1997-04-18) ADAMS, M.D. ET AL.: "EST77899 Pancreas tumor III Homo sapiens cDNA 5' end similar to olfactomedin" Database accession no. AA366895 XP002174319 the whole document	1,4, 7-10,12, 16,58,59

P,X	WO 00 37643 A (CORIXA CORPORATION) 29 June 2000 (2000-06-29) contig ID NO: 2 the whole document	1,2,4-60

P,X	WO 00 73348 A (GENENTECH, INC.) 7 December 2000 (2000-12-07) abstract page 1, line 1 -page 6, line 37 PRO698 page 7, line 18 - line 21 page 47, line 1 -page 70, line 27 page 79 -page 81; example 8 page 95 -page 106; examples 26-33 page 107 -page 122; example 36; table 7 page 124 -page 130; claims 1-40 page 139 -page 140; figures 9,10	1,2,4,5, 7-17,21, 31,40-60

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 00 21991 A (GENETICS INSTITUTE, INC.) 20 April 2000 (2000-04-20) abstract SEQ ID NO: 463 clone ID NO: IJ1193 page 3, line 1 -page 104, line 17; table 2 page 121, line 1 -page 127, line 11 page 130; table 3 page 135 -page 200; claims 1-8 figure P123 ---	1,2,4,5, 7-17,58, 59

P,X	WO 00 55350 A (HUMAN GENOME SCIENCES, INC.) 21 September 2000 (2000-09-21)
	
	abstract
	page 2, line 17 -page 11, line 7
	SEQ ID NO: 445
	page 70; table 1
	page 119, line 1 -page 124, line 2
	contig ID NO: 840608
	page 208; table 3
	page 241, line 1 -page 255, line 32
	page 284, line 1 -page 372, line 4
	page 375, line 6 -page 381, line 11
	page 415, line 24 -page 421, line 22
	page 423, line 29 -page 432, line 13
	page 602; claims 1-17,19,21
	SEQ ID NO: 445
	  figures P375-P377
	SEQ ID NO: 1287
	  figures P1319-P1322
	
	--- 	
		1,4,
		7-22,31,
		54-60

E	WO 01 42285 A (INCYTE GENOMICS, INC.) 14 June 2001 (2001-06-14) abstract page 4, line 33 -page 9, line 32 page 23, line 29 -page 33, line 31 page 35, line 32 -page 55, line 8 SEQ ID NO: 17 page 78; table 2 SEQ ID NO: 38 page 83; table 3 page 89 -page 91; claims 1-17,23,24 page 108 -page 110 page 129 -page 130 ---	1,2,4,5, 7-17,21, 31,40-60

-/--

2

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	US 6 183 968 B1 (BANDMAN, O. ET AL.) 6 February 2001 (2001-02-06) abstract column 1, line 54 -column 2, line 35 column 3, line 61 -column 12, line 58 SEQ ID NO: 127 column 21 -column 22; table 1 column 191 -column 194 column 205 -column 206; claims 1,3,5-7 ---	1,2,4,5, 7-10, 12-16, 48,50, 51,53, 58-60
A	WO 98 53319 A (JOHNS HOPKINS UNIVERSITY) 26 November 1998 (1998-11-26) the whole document ---	1,2,4-60
A	SJÖGREN, H.O.: "Therapeutic immunization against cancer antigens using genetically engineered cells" IMMUNOTECHNOLOGY, vol. 3, no. 3, October 1997 (1997-10), pages 161-172, XP004097000 the whole document ---	23-31, 35-39
A	EP 0 317 141 A (BECTON DICKINSON AND COMPANY) 24 May 1989 (1989-05-24) the whole document -----	32-34

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INTERNATIONAL SEARCH REPORT

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

   Although claims 21, 22, 29-31, 34, 37-39 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

2. [ ] Claims Nos.:
   because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. [ ] Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

   see additional sheet

1. [ ] As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. [X] No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

   1,2,4-60 partially

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[ ] No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (1)) (July 1998)

FURTHER INFORMATION CONTINUED FROM   PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1, 2, 4-60 partially

   Invention 1

   An isolated polypeptide comprising at least an immunogenic portion of a colon tumor protein wherein the tumor protein comprises an amino acid sequence being encoded by the polynucleotide sequence SEQ ID NO: 2, variants of said polypeptide, fusion proteins comprising said polypeptide, polynucleotides or oligonucleotides derived from said polynucleotide, antibodies or fragments thereof binding to said polypeptide, diagnostic kits comprising said oligonucleotides or antibodies, pharmaceutical compositions and vaccines comprising said products or comprising antigen-presenting cells expressing said polypeptide and their use in methods for inhibiting, monitoring or diagnosing the development of a colon cancer, for removing tumor cells from a a sample or for expanding and / or stimulating T-cells;

2. Claims: 1, 2, 4-60 partially

   Invention 2

   idem as subject 1 but limited to SEQ ID NO: 8;

3. - 73. Claims: 1, 2, 4-60 partially

   Inventions 3-73

   idem as subject 1 but limited to SEQ ID NOS: 15-184 as described in claim 1;

74. Claims: 1-60 partially

   Invention 74

   idem as subject 1 but limited to SEQ ID NO: 189 and an isolated polypetide comprising SEQ ID NO: 200;

75. - 659. Claims: 1, 2, 4-60 partially

   Inventions 75-659

   idem as subject 1 but limited to SEQ ID NOS: 191-1081 as described in claim 1;

FURTHER INFORMATION CONTINUED FROM   PCT/ISA/ 210

660. - 666. Claims: 3 partially

Inventions 660-666

isolated polypetides comprising SEQ ID NOS: 198-204;

667. - 1072. Claims: 25-53 partially

Inventions 667-1072

a vaccine comprising antigen-presenting cells expressing a
polypeptide comprising at least an immunogenic portion of a
colon tumor protein wherein the tumor protein comprises an
amino acid sequence being encoded by the polynucleotide
sequences SEQ ID NOS: 1-121, 123-197, 205-630, 632-684, 686,
690, 691, 694-1081 (in so far as not being mentioned in
claim 1) and the use of said polypeptides, polynucleotides
and antigen-presenting cells in methods for inhibiting,
monitoring or diagnosing the development of a colon cancer,
for removing tumor cells from a a sample or for expanding
and / or stimulating T-cells.

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5929033	A	27-07-1999	NONE		
WO 9960161	A	25-11-1999	EP	1080227 A1	07-03-2001
			WO	9960161 A1	25-11-1999
WO 9963088	A	09-12-1999	AU	4328699 A	20-12-1999
			WO	9963088 A2	09-12-1999
			AU	2212299 A	26-07-1999
			WO	9935170 A2	15-07-1999
WO 9901020	A	14-01-1999	AU	8379598 A	25-01-1999
			EP	1009766 A1	21-06-2000
			WO	9901020 A2	14-01-1999
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			EP	1144632 A2	17-10-2001
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			AU	2215300 A	28-12-2000
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			EP	1141289 A2	10-10-2001
			WO	0053753 A2	14-09-2000
			WO	0053755 A2	14-09-2000
			WO	0153486 A1	26-07-2001
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			WO	0053758 A2	14-09-2000
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			WO	0053756 A2	14-09-2000
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			AU	1749800 A	04-10-2000
			AU	1749900 A	12-07-2000
			AU	2390700 A	05-02-2001
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